THE COTTAGE GARDENER:

A

PRACTICAL GUIDE

IN EVERY DEPARTMENT OF HORTICULTURE

AND

RURAL AND DOMESTIC ECONOMY.

CONDUCTED BY GEORGE W. JOHNSON, ESQ.

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THE FRUIT AND FORCING-GARDEN, by Mr. R. Errington, Gardener to Sir P. Egerton, Bart., Oulton Park.
THE KITCHEN-GARDEN, by Mr. J. Robson, Gardener to the late Earl Cornwallis; and Mr. T. Weaver, Gardener to the Warden of Winchester College.
THE FLOWER-GARDEN, by Mr. D. Beaton, late Gardener to Sir W. Middleton, Bart., Shrubland Park.
FLORISTS' FLOWERS, by Mr. T. Appleby, Victoria Nursery, Uxbridge.
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ALLOTMENT FARMING, and the Economy of the Cow-shed, Pig-stye, and Hen-roost, by Mr. Errington and others.
HOUSEHOLD ECONOMY, by the authoress of "My Flowers."
VEGETABLE AND OTHER COOKERY, by a Lady.
THE AVIARY, by a Naturalist and Bird Fancier.

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TO OUR READERS.

It has been written—

> None, if they had power to choose,
> (Or I'll resign my charter),
> For twenty warmest "How d'ye do's"
> One kind "Good bye" would barter.

Now, this may be all very well for a poet, but as Editor, about to commence a new volume, we most emphatically—because truthfully—say, that we shall prefer one cheering "How d'ye do," to any number of the most blandly expressed "Good bye's" that can be given;—in fact, we do not wish to hear one of them. This, however, is a vain wish, for we have had one farewell, and it is so original that we give it entire:—"Why are you going to improve The Cottage Gardener? I am quite contented with it as it is; and I will not be forced to have forty additional double numbers, even for a halfpenny each additional." Well, there is one subscriber irretrievably gone; and we receive even his "Good bye" with regret, for he is a sterling specimen of the nearly extinct race of the venerable Stand-stills, and we are grateful even for his past approval.

However, we have the consolation of a budget of greetings to out-balance this counter-check. A Norfolk clergyman writes thus:—

"Permit me, in fine, to add my humble but sincere testimony to that of thousands, in praise of the work which you superintend. The very valuable information which it imparts so plainly and so practically, is only equalled by the sound lessons of religion which it inculcates. And to see many of my poorer neighbours stealing a peep into its pages, whenever their few leisure moments will permit (for it delights me to give them this little privilege), is a significant proof that it fulfils its mission well. I could wish that, instead of the demoralising trash of infidel journalists so commonly to be found in our village ale-houses, each took in a copy of The Cottage Gardener."

From among our artisan friends, we have this from Halifax:—

"I have been a subscriber to your valuable periodical for upwards of nine months, and have had great pleasure in reading its pages. I first met with it in the library of our respected masters, the Messrs. James Akroyd and Sons, which is free of expense to the work-people, and then became a subscriber, and have continued up to the present, I frequently recommend it among my shopmates; and when they tell me it is too dear, I say, 'It is only the price of a pint of ale, and there is no head-ache attending it, and you see what is going on in the horticultural and floral world.'"

When, in addition to these onward cheers, we call to remembrance that our aristocratic contemporary, *The Quarterly Review*, says that the contents of our pages are as suitable for the cottage of gentility, with double coach-house, as for that usually tenanted by the labourer, we hope our clerical friend does not express too much when he says, The Cottage Gardener "fulfils its mission well." That it shall continue to do so, no labour, no expense, will be spared; and when another volume closes, we hope to have deserved, and to receive as few "Good bye's," and as many "How d'ye do's,', as on the present occasion.

[illegible]

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WOODCUTS.

WEEKLY CALENDAR.

M D	W D	APRIL 1—7, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
1	TH	Ash flowers.	30.108—30.101	55—38	N.E.	—	36 a. 5	32 a. 6	4m 34	12	3 51	92
2	F	Cambridge Term ends.	30.085—30.021	52—42	S.W.	03	34	33	5 5	13	3 33	93
3	S	Oxford Term ends.	30.122—30.021	57—38	N.W.	08	32	35	5 31	14	3 15	94
4	SUN	PALM SUNDAY.	30.100—30.025	53—26	N.	—	30	36	rises.	☺	2 57	95
5	M	Wych Elm flowers.	30.028—29.974	51—26	N.E.	01	28	38	8 a 2	16	2 39	96
6	TU	Old Lady Day.	30.066—29.991	47—21	N.E.	—	25	40	9 28	17	2 22	97
7	W	Black thorn flowers.	30.055—30.002	49—37	N.E.	—	23	41	10 50	18	2 4	98

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 56° and 36.4° respectively. The greatest heat, 78°, occurred on the 3rd in 1848; and the lowest cold, 16° on the 1st in 1838. During the period 100 days were fine, and on 75 rain fell.

BRITISH WILD FLOWERS.

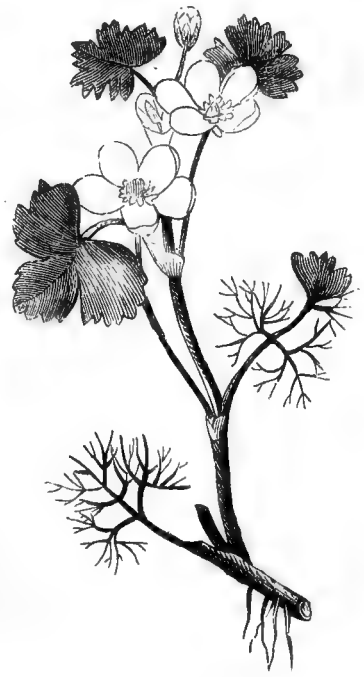
CROWFOOTS—RANUNCULACEÆ.

RANUNCULUS.

(*Continued from page* 377, *Vol.* vii.)

RANUNCULUS AQUATILIS: White Floating Crowfoot; Water Crowfoot.

Description.—It is a water perennial. *Root* fibrous. *Stems* several, long in proportion to the depth of the water, branched, clothed with alternate leaves, having broad membranous stipules at the bottom of each leaf-stalk. *Leaves* long-stalked, smooth, dark green; *upper leaves* floating on the surface, variously three or five-lobed and notched, with leaf-stalk nearly in the centre; *lower leaves* under water, generally three-branched, and divided into numerous hair-like segments. Sometimes all the leaves are of this form, none of them rising to the surface. This usually occurs in rapid streams, and the leaves and their stalks then become much lengthened. *Flowers* on stalks arising from the same sheath with the leaves, and opposite to them. *Petals* white, with a yellow spot at the bottom. *Nectary* a short open tube.



VARIETY 2. *Large-flowered.* None of the leaves hair-like; flowers very large.

VARIETY 3. *Circle-leaved.* (Circinatus.) All the leaves hair-like, and of such equal-lengthed segments, that these form a roundish outline.

VARIETY 4. *Spreading-leaved* (Diffusus) or Fine Water Crowfoot. All the leaves hair-like, segments spreading, their outline irregular.

VARIETY 5. *Stream-dwelling.* (Fluviatilis.) All the leaves hair-like, their segments very long, parallel, and floating in the direction of the current. Exhausted by the excessive production of leaves this variety rarely flowers. This is the *R. pantothrix* of some botanists.

Places where found.—Very common in ditches and ponds. Variety 5 in rapid streams.

Time of flowering.—May to July.

History.—This is not only not injurious, but is nutritious to some animals. Thus Dr. Pulteney has recorded, that in the neighbourhood of Ringwood, on the banks of the Avon, some of the cottagers in his time supported their cows and even horses almost entirely by this plant. A quantity of it was collected every morning and brought in a boat to the edge of the stream, from which the cows eat it with so much greediness, that each cow was allowed no more than from 25 to 30 lbs. daily. One man kept five cows and one horse so much upon this plant, with the scanty pasturage of a heath, that they consumed only half-a-ton of hay in the year, the hay being given only when the water was frozen. Hogs, he states, also thrive so well upon this plant that they require no other food until put up to fatten.

RANUNCULUS PARVIFLORUS: Small-flowered Crowfoot; Hairy Crowfoot.

Description.—It is a trailing annual. *Root* fibrous. *Herb* pale green, covered with soft hairs. *Stems* many, prostrate, cylindrical, hollow, branched, leafy, about nine inches long. *Root-leaves* long-stalked, kidney-shaped, acutely notched; the upper ones three-lobed; uppermost of all in deep spear-head entire segments; all the leaves feel very soft. *Flowers* opposite to the leaves, solitary, stalked, small, yellow, with narrow reversed-egg *petals*, one or more of which are often wanting, or imperfect. *Calyx* a little bent back. *Seeds* lentil-shaped, with a broad, flattened, curved point; their sides covered with small, hooked prickles.

Places where found.—Corn fields and meadows on a gravelly soil. Not common.

Time of flowering.—May and June.

History.—Although, following the opinion of other botanists, we state this to be a plant not common in Britain, yet we believe it to be of much more frequent occurrence than is usually supposed. Being an annual, its flowers of brief duration, and its herbage trailing and inconspicuous, it often escapes notice. Hill, in his *British Herbal*, gives a drawing of it under the title of *Low Crowfoot with prickly seeds.* (*Smith; Withering; Martyn.*)

ONE of the most gratifying and animating of spectacles is a man religiously and patiently winning his way from obscurity and poverty to independence and distinction, with no other aids than his own acquirements, his own exertions, and the blessing of God, on whom he relies. Such a man is exhibited to us in the *Forsyth MSS.* in the person of ALEXANDER ANDERSON; and though he has long been known to fame as an excellent botanist, yet, until these manuscripts came into our hands, little was known of his history. It shall be our most pleasant task, in this and some following notices, to trace his upward progress.

In the year 1775 a young man might be seen at New York, lodging with his brother, a printer, ready to turn his hand to anything for a livelihood, but who had been instructed in gardening at the Royal Gardens of England, and whose best love was devoted to the study of botany. Everything was against him. The war of independence was as its height—no one thought of engaging a gardener. "The banner of Mars is displayed in every corner; nay, even in the churchyards," said Mr. Anderson, writing to Mr. Forsyth in the May of 1775. "Nothing is heard here but the noise of drums—nothing to be seen but the gun and bayonet; so that all America, from 16 years old to 60, is in arms." "They laugh at me when they see me lugging home my plants." It would have been well if the English Government had judged of the issue as he did; for, adds this clear-sighted young Scotchman—"All the force of Britain and Ireland cannot subdue the Americans. They are unanimous—they are all linked together as with a chain—they are numerous—and Britain will find to its sad experience they are men of courage and resolution."

He remained at New York until the summer of 1777, and a sketch of what occurred to him during the time, and until the beginning of 1778, is told in the following letter, the improved handwriting and orthography of which testify that he had not misspent his time.

MR. A. ANDERSON TO MR. FORSYTH.

Philadelphia, 24th February, 1778.

As to the situation of affairs on this side the water at this alarming juncture, I shall not say anything, for if you see the young man that carries this letter, he will satisfy you as to that particular. But, in my opinion, things have a dismal aspect at this present time, nor do I think there will be an exit to this fatal conflict until the country is totally laid in ruins.

Notwithstanding the necessity that the Americans are in for many of the necessaries of life, and the Europeans daily deserting from their army, yet they remain equally obstinate and persisting in their wretched and foolish schemes.

May the all-ruling hand of heaven put a speedy end to so tremendous and unnatural war, and restore peace and plenty again to this once happy land.

Trade is but dull here at present, owing to the critical times, which terrify people in engaging in business. For my part, I have transacted but little business since I came into the country, it being simply impossible to settle in any way whatsoever, on account of the times, but I did not mind that, as I had board and lodging from my brother, and money when I wanted it. So, having but little or nothing to attend to, I devoted my time entirely the first summer to collecting plants, specimens, and seeds, as my inclination has ever been in pursuit of such disquisitions; indeed, I found enough to gratify my curiosity in this fertile land.

The second summer being very turbulent, by the rebels busied in raising their armies, I was constrained to seclude myself from all society, for fear of being entangled to take a part with them (and it was with the utmost difficulty and precaution that I avoided it). In this situation I was deterred from the principal object of my desires of tracing the vegetable kingdom. I applied myself to reading and improving in the Latin, and to learn the French, in which tongue I have . . . . . for I understand it almost as well as the . . . . . (MS. imperfect.)

Last summer I went from New York a volunteer in the army, and stayed with them during the campaign until they arrived at Philadelphia, at which place I left them. And as my books and clothes are at New York, I intend to return there as soon as an opportunity offers, when I may have a chance to begin my collection again on York and Long Islands. If my chest had been here with me I think I should have returned to England with these vessels, as there is but little peace, or comfort, on this side the Atlantic at this period.

Among the plants common about New York (viz., within ten miles) are *Laurus sassafras*, *Viburnum tinus*, *Gleditschia* (or what the people here call the Honey Locust), *Liquid-ambar styraciflua*, *Liquid-ambar asplenifolium* (grows on high and sandy grounds—most commonly it grows on eminences by the sides of rivers, among sand), *Liriodendron tulipifera* (waxes to a large tree in a fertile soil), *Acer trifoliata*, *Oaks* (many species), *Red Cedar*, *Chesnuts*, *Walnuts*, *Gum-tree* (vulgarly so called—unknown to me), *Magnolia glauca*, *Kalmia latifolia* in great plenty (grows in a high and dry black soil, commonly a north-west aspect, by the sides of woods; I think your bog is by far a too wet situation for this plant); *Azaleas*, *Andromedas*, *Clethra alnifolia*, *Collinsonia canadensis*, *Mespilus canadensis*, *Acorus calamus*, *Chelones* (these all grow in moist soil), *Solidagos*, *Asters* variety, *Heliantheums*, *Serratulas*, *Gnaphuliums*, *Geranium sylvaticum*, *Polygonatums*, *Hieraciums*, *Hypericums*, *Phytolacca decandra*, *Virginian Snake-roots*, a species of *Onabranche*, grows in thick woods among rotten leaves; *Ceanothus Americanus*, *Actea spicata*, *Roses*, many; *Cactus opuntia*, flowers beautifully on rocks; *Asclepias*, the white, purple, and orange-flowered—fine plants, growing in watery grounds; *Apocynums*, *Anemone nemorosa*, *Bryonias*, *Rhus Virginianus*, ditto *toxicodendron*, *Hederas*, *Nymphea*, *Satyrions*, *Martegons*, a species of *Mesembryanthemum*, grows in the sand; a *Symphetum*, *Pyrola*, *Paris quadrifolia*, with many others too tedious to mention, besides a vast number of trees . . . (MS. imperfect) unknown to me; and I am confident many of them have never been seen on your side of the Atlantic.

The country everywhere spontaneously produces esculent fruits and roots.

The water-melon comes to the highest perfection here, especially in Jersey, where the soil is for the most part sandy. I think it is far superior to either the Musk or Cantaloupe melons in Europe. They grow with but small trouble, sown in the end of May, on the most sandy fields.

There is a great variety of insects, birds, serpents, and other animals, in these parts; moths extremely large, and of beautiful colours. A number of snakes, some very dangerous in bite, as the rattle, black, yellow-striped, and copper-head. The black are very desperate in the time of their copulation, and will chase a man a great way. Some of them are six or seven feet long.

Among the offspring of the winged tribe is that rare and curious creature vulgarly named the humming-bird. It is in bigness scarce the end of a man's little finger, with a bill about eighteen inches long, with which it extracts the honey from the flowers, like as a bee, still continuing on wing—same time makes a kind of humming noise with its wings, from which it derived its name; and here is the mocking-bird, so called because it imitates the notes of all other birds that it hears (this is as large as your blackbird): much esteemed for its singing.

I should be much obliged to you if you would be so good as to send me some directions for the preserving serpents and birds.

Among my papers that I lost at New York, I had some observations on the fascination of snakes, and exhalation and falling of rains in America, and on the virtue of small plants, as ascertained by the country people and Indians.

The Council of the Royal Agricultural Society of England, as our readers are aware, have announced that prizes will this year be offered for poultry. The prize list, in a complete form, has just been issued, and we published it in our previous number. Those who, during the last few years, have laboured so energetically in the establishment of exhibitions of this nature, with the view of directing attention to a neglected branch of rural economy, must be highly gratified to find that the most influential agricultural society, not only of Eng-

land, but of the world, has offered its co-operation, and that in a manner the most liberal.

The annual meeting of the *Yorkshire Agricultural Society*, takes place this year at Sheffield, in the month of August; and prizes are, as usual, offered for poultry, but, we believe, on a considerably extended scale as compared with former years.

The Council of the *Bath and West of England Society*, which will hold its show at Taunton, in June next, also offer prizes for domestic poultry; and at a recent meeting of an influential character, held at *Newcastle-upon-Tyne*, John Grey, Esq., of Dilston, presiding, it was determined to establish a Society, to be called "The Northern Cattle Show Society," for holding an exhibition of fat cattle, sheep, swine, and Poultry, at Newcastle, at Christmas, in each year. In fact, poultry will henceforth form a feature, and a most interesting and attractive one, at all our agricultural meetings of importance.—W.

GOSSIP.

Mr. Isaac Oldaker, who died at the commencement of the last month, was one of the oldest of the gardeners who, by their enlightened practice, have rendered the present century so distinguishable for its improved horticulture. He was, successively, gardener to Sir Joseph Banks and the Emperor of Russia, from the government of which country he received a pension. His early advocacy of the German mode of growing mushrooms in houses, his culture of violets in winter, and his fruit culture at Spring Grove, are all facts of celebrity, and worthy of remembrance to his honour,

Every one who has a proper patriotism rejoices when his native land gives birth to anything excellent—it is one of the ramifications of pride that one need not be ashamed of; therefore, we acknowledge that we feel not a little glad, and we hope our readers will be equally glad, that it is at length *proved* that *John Tradescant* the younger was an Englishman. The curious tracing out of this fact is thus told in a recent number of *Notes and Queries*:—

"A correspondent, C. C. R., after quoting the following mutilated MS. note, written in pencil in a copy of Dr. Ducarel's Tract on the subject, preserved among the books in the Ashmolean Museum—

"'Consult (with certainty of finding information concerning the Tradescants) the Registers of —apham, Kent,'—

suggested that Meopham was the parish referred to, and that search should be made there by some correspondent resident in that neighbourhood. The hint was not, however, taken, and the matter dropped for a time.

"At the close of last year we received a communication from a learned and much valued friend, now, alas! no more (Rev. Lancelot Sharpe), telling us that Meopham was the place referred to, and suggesting that we should get extracts from the register for the information of our readers. Upon this hint we acted; but our endeavours, for reasons to which we need not more particularly refer, failed, and it was not until our attention was recalled to the subject by the endeavour that is making, and we trust successfully making, to procure subscriptions for restoring the Tradescant Monument at Lambeth, that we applied to another friend resident in the neighbourhood of Meopham for his assistance in the business. That assistance was (as it has ever been) rendered most cheerfully and most effectually; and we are now enabled to lay before our readers and the Committee of the Tradescant Monument Restoration Fund, the following evidence that John Tradescant the younger was a Man of Kent. It is extracted from the baptismal register of Meopham:—

"'In 1608, August, the iiij daye, John, the sonne of John Tradescant, was baptized eodem die —'

"Although we are not without hopes of receiving further information from the same source, we could not refrain from bringing this new fact in the history of the Tradescants at once before our readers."

A gentleman writing from Omagh, says:—

"I have kept a plant of "*Statice Americana*" in the open ground (in the north of Ireland) all the winter, with *very slight* protection, (only a hand-glass for a few days and nights during the snow and frost, and one side of the glass broken), and it is now alive and well. You advised the trial, and have now the result."

THE ORCHARD HOUSE.

Those who have just commenced this mode of fruit culture will doubtless have a lot of newly potted trees, and the due care of these, in order to lose no time, will become of importance. Our last paper on this subject treated on potting, soil, &c., and there is no occasion now for repetition. The pruning we may advert to, although in many cases it has been performed, as indeed it ought to have been. There are several fanciful modes equally productive of fruitful habits, but not equally eligible to one of the chief ends in view, viz., economy of space. The habits of growth of the trees may, in some degree, be permitted to determine the future form of the kind, for habits differ considerably. All warfare waged with the latter principle generally involves a sacrifice of time; indeed, one or two years are generally lost in battling with the wayward propensities of trees in a course of training, intended to render them subservient to a specific purpose.

We therefore advise the beginner to prune very moderately, in the old wood we mean. To this end he might have two sets of trees; the one intended to fruit with the least possible loss of time, the other trained according to the most approved principles, and which, as before stated, will be a year or two longer in coming into full bearing. When we take into consideration the severe limitation of space which a moderate-sized orchard-house may contain, it is evident that if there is much elbowing, the rich lists of fruits which are to be had in this country will only be in very small part available. Much in a small space, must be the motto with the orchard-house cultivator; and this being admitted, it becomes a question whether any general form of training, liable to as few exceptions as possible, can be adopted, and if so, what form?

The pyramidal form, so much and deservedly recommended by Mr. Rivers and others of fruit-growing notoriety, immediately comes to mind, as embodying almost every essential in the orchard-house. We do not say that an attempt should be made in all cases to force this habit on the trees, but that by it more trees can be grown in the same extent of orchard-house than by any other mode. Plants thus trained will both receive more light, in an equalised way, to all portions of their branches, and will less shade their neighbours. Those who train their own pyramids must, of course, commence with a straight central shoot, and continue to build the fabric of the tree progressively, taking care that the lower branches are somewhat established before any amount of rambling growth be permitted in the top. Indeed, the whole bush must be kept constantly under artistic control; and to this end finger-and-thumb work will become indispensable during the growing season. Those who can afford it will do well, in our opinion, to purchase pyramids ready trained in

the Rivers' style; this will both economise room, and avoid "hope deferred," &c.

Were we commencing an orchard-house, we would estimate the number of trees required, and determine the kinds; and these we would purchase in two distinct lots; one half established pyramids, root-pruned, the other "maidens," with a clean shoot, about two years from the graft or bud. The latter being potted, might be placed, alternately, all over the house with the established pyramids, thus enabling the latter to receive plenty of air and light. As soon as any became overgrown, too coarse, or barren, we would plant them out as dwarf standards in the kitchen-garden, keeping always a successional stock rising. To those who have already commenced this practice, we may say, mind that the young trees are carefully watered according to their needs, and the pots shaded, if possible, from sunshine. The latter is a point, we think, that has escaped Mr. Rivers, and one we hold to be of considerable importance to many things in pots. Double pots might be had recourse to, twigs of bushes stuck in, or bushy and low pot plants placed before each pot.

We have much more to say on this subject, and will soon return to it; our space is, for the present, exhausted. R. Errington.

GRAFTING FOR THE FLOWER-GARDEN AND PLEASURE GROUNDS.

The easterly wind was so dry and cutting, and so prevalent throughout the greater portion of March, that grafting in general must have been delayed this season to a later period than usual, but we are still in good time for fancy plants of almost all sorts, and there are few things which may not be increased in the spring from grafting. For the first time for many years these easterly winds have been very much in my favour, or rather in favour of my new cottages, exemplifying the adage of the ill wind that blows good to nobody; and as to grafting, the most extraordinary thing I ever heard of was, that many hundreds or may be thousands, of standards of the new *Sikkim Rhododendrons* would be soon in the market. The seeds of these, amounting to forty or more new kinds, were collected by Dr. Hooker, during his late mission to the East, and, as far as I recollect, the first of these seeds were only sown in England in 1850, certainly not earlier than the end of 1849, and now they have this large stock of standard-high plants of them, which will be soon on sale. One of the most dwarf of these new rhododendrons is really a most beautiful thing. It flowers when only six inches high, and in two years from the sowing of the seed. It is the one I noticed at page 381, and is called *Rhododendron ciliatum*. We had another specimen of it in bloom on the 16th March, shown before the Horticultural Society, from Chatsworth, and another lecture on its great merits for the cross-breeder, with more particulars about the habit of it, and so forth. On the Indian hills it never grows above fourteen or fifteen inches high, but spreads out into a dense bush, and what is much better than all that, it is a *genuine variety*, and not a species at all, and will soon run into as many varieties as the Chilian calceolarias. The two specimens which we have had before us are as different from each other as chalk and cheese, and they, too, are quite different from their own mother, which we were told is faithfully represented in colour in a large work recently published on these very plants. The mother plant has lilac flowers, different from all other colours in the old rhododendrons. The first one I saw was a light blush; the one from Chatsworth had the flowers pure white, and if these flowers were shown without the plant, or without any leaves, you would say immediately it was a new white China azalea, belonging to the section of *variegata*, only the flowers had not so much of the florist in them as in the latter. *Ciliatum* means fringed like an eye-lash, the leaves and their stalks being fringed with white hairs in that way. Everybody must get this new rhododendron as soon as he can for spring bedders, and what a charming race for filling up the flower-beds in the winter.

Rhododendron caucasicum was the one most recommended to cross with this dwarf section in the lecture. Somebody had been stupid enough to pluck off three blossoms from the little plant shown on the 16th ult.—probably they were too far gone for great folks to see them—but every blossom ought to have been crossed, and the pods saved, though the faded flowers might be an eye-sore to every one in the room. There was abundance of time to prepare and force another rhododendron to meet this one since the flower-buds appeared. To pretend that it is a genuine species, and ought to be kept as such, is a story not worth listening to.

Many of these Sikkim rhododendrons are said to be very difficult to grow. A friend of mine, a nurseryman, has lost none of them, and at this moment he has hundreds and hundreds of them pricked off in pots, and in cold frames, with only a single mat to cover them all this winter, the lights being opened every day, and thrown quite back during mild weather. Those who find them difficult to grow have not the right kind of peat for them, and they ought to graft many of them on the common *R. ponticum*, and the stronger kinds on the North American large species, and quite close to the ground. It is not clear yet if these new Indian shrubs and trees, as some of them are, are quite hardy for our climate; but if they were grafted on these hardy stocks they would have a much better chance; and this brings me round to the object of this paper.

A great field is yet open to us for cultivating many half-hardy plants in the open air, by grafting or budding them on kinds of their own kindred that are known to be quite hardy. It does not matter much whether you have a small plant or not to use as a stock in the spring. A tree as large as a horse-chesnut will do; if you dig down to the roots, and find some of them of the size of one's little finger, they will do to graft on as well, if not better, than little plants. Mr. Rivers told us last summer he could never get the *Pavia polystachia* to graft or bud in the usual way. What a triumph it would be for an amateur or a cottage gardener if he could do at once what this great nurseryman could not do after all his practice, and his travelling among ourselves, and on the continent. Let us just try an experiment on purpose for this very plant. Take the roots of any other *Pavia*, or of a horse-chesnut, just where you find them—the sap is now on the rise—cut off its progress upwards by cutting the root from a larger one, but by no means disturb the other end of it—that might spoil the whole process; so let this little root, be it ever so long, remain as it is, only graft the *Pavia* on the upper end of it, and then bury the grafted parts in the soil again all but the top bud of the graft, and see that the root lies in the old natural position; if this experiment fails, give it up for other means in the autumn. Now this is really a very simple way of getting many things to grow or "take," as we say, that would not easily be made to unite by any other means. All the *Cratæguses*, or fine thorns, might thus be propagated out in the fields or hedges, if one had no little thorns for stocks. All the *Robinias* on Cobbet's locust-tree, or common *Acacia*; all the *Caraganas* on *C. frutescens*; all the *Brooms* and *Cytisuses* on the laburnum roots; and all and every family in the same way, on some roots or another within their own affinity, and also bear in mind to *work the more tender on the hardier kinds.*

Stransvesia glaucescens is a beautiful, but rather tender

shrub, which one seldom sees in gardens, because the hard winters often kill it in many places. Graft it now on the common May or hawthorn, however, and it will stand the frost down to zero on a dry soil. *Photinia serrulata* is another very beautiful shrub, or large bush, which every one ought to grow, on account of its fine, glossy, large leaves, which come out early in the spring, of a fine reddish-purple colour, and the old leaves turn purplish in the autumn; like *Stransvesia*, it is one of the Appleworts, and will do much better grafted on a thorn or quince, on account of its own roots being too tender for our climate. There is another *Photinia*, called *dubia*, a native of Nepaul, where they use it for dying scarlet

Then there is the *Eriobotrya*, or *Loquat*, another Applewort, closely allied to the two last, which is all but hardy about London, and quite so in the south-west of England. I have had it stand many a hard winter in Herefordshire, after grafting it on the common thorn; but I think the quince would make a more natural stock for it. I think the fruit of it is called Japanese quince, and Loquat by the Chinese. At any rate, we had a beautiful dish of this fruit exhibited the other day in Regent-street, from Mr. Tillery, gardener at the Duke of Portland's; but although our teeth watered to be at them, we could not taste them, because we had no orders, and we are very particular about such fruits as are sent this way. Any fruit is quite safe in our hands; but, in this instance, I could see very plainly that the lecture about these Loquats set the teeth on edge. As Mr. Errington was not there, I must say that Mr. Tillery sent an excellent account of how he managed to bring this fruit to table, that it is thought a good deal of coming-in in succession early in the spring, when other fruits are getting scarce. The trees are uncovered in the summer, as they might be under Mr. Rivers's orchard-house plan. In September they come into blossom; the glass is put on; the temperature got up to stove heat after a while, and kept so through the winter, and the result is a fine crop of fruit early in the spring. I wish Mr. Tillery had allowed some of the old gardeners to have tasted this fruit under his new system. I tasted the same kind, under a different management, just twenty years ago next May, from Mr Forbes, then gardener to the late Earl Powis, at Walcot Hall, in Shropshire. I recollect the circumstance more particularly, from having then come very nearly to the end of my days by a brute of an Indian cow, with a great hump on her back, which ran after me. These Loquats look very much like small apricots; I fruited them myself once, but it was on the cold system, as at Walcot, and we did not think much of them,—hence my desire to taste them now to know the difference, for I can easily conceive how the high winter temperature must improve the flesh and flavour. On the cold system, I can vouch they are not worth growing in England, except for curiosity; but in a sheltered part in the flower-garden the bush would make an interesting group with the *Photinia* and *Stransvesia*, and while they were young they might be sheltered a little with some dry covering.

I must notice what I never heard of before respecting the beautiful *Forsythia viridissima*, the same plant being again exhibited from our own garden at Chiswick; and in the lecture about it it was said, that although this plant is as hardy as a gooseberry-bush, it ought to be planted against a south wall, "where it would be roasted in the summer and well-ripened in the autumn." The flowers come out after that treatment in immense quantities in the following spring, and being well sheltered by the wall, they make a fine show; but when the plant is in the shrubbery, the flowers stand no time, being as susceptible of cold winds as those of the camellia. Let all our cottage gardeners bear this in mind, for, old as I am, I thought I was well paid for my journey to town by this piece of useful intelligence, and the more so, because I have recommended the Forsythia to be planted in the open shrubbery more than once in these pages; but, somehow or other, these Londoners know everything better that we do in the country.

A great nurseryman once told me that he had fine tall standards of the common broom and gorse, or furze, grafted on the common laburnum; but the object of this paper is to draw attention more to the subject of inuring half-hardy plants to our cold climate by means of grafting them on hardier stocks of their own kinds. There are hundreds of greenhouse shrubs that might thus be turned out into the borders during the summer, taken up and potted before winter, kept half dry for three or four months, and then turned out again. After a few years, they would get so hardened, that many of them would live out on a dry soil all the year round, with a very slight protection. Take the genus *Acacia* for instance, and you might select twenty or thirty kinds of them for a spring garden, if they were grafted at different heights on one of the "green wattles" of Australia, or *Acacia dealbata*, the hardiest of them all, and one of the fastest growers. On the 2nd of March, we had a bough of this wattle in full bloom in Regent-street, all the way from Exeter, where the tree is quite hardy.

I had a letter from Suffolk, the other day, from the friend who kept his *Geraniums among the shavings* over the winter, with their roots sealed in damp moss. He says *dryness* is the great secret of the matter, and he adds, "but you must never make both ends meet." Wet moss is as essential at one end, as dry air is at the other, but that is only what we have all along been insisting; dry air, dry covering, of which the best is dry pea-sticks put over a bed with dry fern over them, so as to let in the dry cold winds, and keep out the dry warm sun in early spring.

When I come to describe the finishing of my new cottages, I shall introduce an entirely new way of preserving half-hardy things over the winter, at very little cost; I mean, new to the style of cottage gardening. But I must now finish my saying about what I saw at the last meeting in Regent-street. The first plant which took my attention was close to the door; and whether it was from the effect of the sudden change of light, I cannot say, but I mistook it for an artificial plant stuck all over with starry wax flowers, of the most intense reddish-pink colour; it was *Boronia triphylla*, the best of them all, and in the lecture it was said to be as easily grown as a Diosma, if so, every one ought to have it, as it certainly is the prettiest plant we have from Australia. Not far from it was the handsomest plant in the whole Chinese flora, *Dielytra spectabilis*, from Mr. Appleby. Mr. Fortune told me, on the spot, he did not see a larger specimen of it in China, and the great lecturer pointed to it as a charming plant for me to write of in The Cottage Gardener. They gave it too much heat, or too much confinement, however, which made the flowers come paler than is natural to them. They all say it is as hardy as a crocus. Mr. Ingram, Her Majesty's chief gardener at Windsor, sent a beautiful *Hybrid Epacris* from *miniata;* the flowers were of a deep vermillion, the white of the parent being subdued altogether; and Mr. Meredith, gardener to the Duke of Sutherland, at Clifden, sent a splendid specimen of a *Hybrid Begonia*, between the tall *B. manicata* and the dwarf *B. hydrocotylifolia*, one of the finest crosses I have seen for years. But the lecture on it was too full for my limited space to day. D. Beaton.

CAPE HEATHS.

(*Continued from page* 334, *Vol.* vii.)

Temperature—Winter Blooming Heaths.—Having adverted in my last article to the potting of heaths, and to their being planted out in beds as a substitute for potting, I now proceed to notice a few matters more in detail, that have hitherto only been incidentally alluded to, and, 1st., as respects *temperature*.—We have reason to believe that heaths are often, as respects the tops at least, subjected to a low temperature on the mountains of Cape Colony. Almost the whole of the varieties may be kept in a comparatively low temperature in winter in this country. *Growing* or *flowering* in such circumstances, if continued any length of time, are however out of the question. There is much difference in many of the varieties as respects hardiness. Plants of varieties of *Ventricosa, Campanulata, Cerinthoides, Tenella, Gracilis, Wilmoreana, Linnæoides, Caffra, Persoluta, Hyemalis, Hybrida*, &c. have stood 4° below the freezing point uninjured, while plants of *Hartnalli, Aristata major, Cavendishii, Ampullacea, Refulgens, Inflata*, &c. in similar circumstances, were next to totally destroyed. In addition to some kinds being less hardy than others, much would also depend upon the state of the plant at the time; *resting* rather than growing, its roots supplied with a sufficiency of moisture, but the soil not *wet*, and the atmosphere surrounding it free from damp fog on the one hand, or a dry air on the other, while in the previous season the wood has been consolidated and ripened by exposure to bright sunlight and a dryish atmosphere. Had we the clear atmosphere of the dry season in the South of Africa, we might let many of our heaths stand in a temperature at the freezing point without danger. It is our moist climate, always furnishing a stimulus to growth, that renders them so easily affected by cold. The present spring has had its fair share of cold, frosty, north and east winds, but as yet they have done little injury, because the weather has been so *dry;* vegetation has not progressed, but that has been its safety. A thin tube filled with dry material, or altogether empty, will not be hurt by frost. A similar tube, containing fluid matter, would soon be shivered by the expansion. So much is all this the case, that they who would wish to acclimatize tender exotics, must depend for their success on short-jointed, well-ripened, slow-growing, rather than luxuriant wood.

Our treatment of Cape heaths, therefore, must be regulated not so much by any abstract rules as by the circumstances of the case; inattention to this has been attended with many a bitter disappointment. Plants intended to bloom in summer, kept in winter in an average temperature of 50° to suit growing and blooming soft-wooded plants, will run the risk of having their shoots loose-textured, and a visit paid them by mildew. Plants growing, however, slowly, intended to bloom in winter and spring, cooled down and frosted, will run the risk of shedding flowers and foliage too. That Cape heaths may be kept safely at the very verge of the freezing point, nay, several degrees below it, is certain, if all the circumstances are suitable. It is equally certain, that attending to the instructions of those who advocate a low temperature for heaths in winter, who speak of letting them be frozen as a matter of no moment, without erecting one finger-post as a note of "*beware*," has too successfully cooled the ardour of many an anxious enthusiast. What may be done by *experienced hands* is not so much the question, as what can be done so as to ensure safety and success by *beginners*.

Leaving, then, the summer temperature just now to take care of itself, as unless, in circumstances to be specified, exposure in a free atmosphere to the expanding influence of heat will be counterbalanced by the consolidating agency of light, I would for the winter recommend 40° as the average night temperature for heaths and heatheries in ordinary circumstances. The outside temperature will often be higher than that, and this the heaths should have the advantage of, along with plenty of air; but, unless when requisite to force a plant into growth or bloom, we would not raise the temperature higher by means of pipes and flues. In very severe frost we would use coverings, and allow the temperature to fall 5° or 7° lower, much rather than 5° higher. In all cases, but especially with such hard wooded plants as heaths, whose shoots are so easily robbed of their moisture, the true point of safety is to approximate the temperature inside and outside of the house as far as the circumstances will permit. Not so long ago, our forcing gardeners would insist upon the proscribed degree of temperature, no matter what the weather. These things are better understood now, and much saving in labour, and expense for fuel, has been the consequence. The best heat is sun-heat, and the *cheapest* too, though many of us recollect shadings during the days, and firings at nights, when under a more natural system neither would have been necessary. Extremes, sooner or later, will always meet in their effects. A low, dry, frosty air, a comparatively high temperature with such weather outside, and little or no covering on the glass, have exactly the same effects; they both rob the plants of their juices, that is, technically, scald and burn them. This has, however, been several times alluded to in detail. Keeping these jottings in view, the temperature of 40° in *ordinary* circumstances will be found a good average one. The plants will not become lanky or drawn, and for those in bloom, or coming into bloom, a rise of 10° from sunshine will be sufficient. When there is no sun, and the weather is cold, the temperature may be raised 5° during the day by artificial means. If more is attempted, water should be supplied on paths and evaporating pans, that the atmosphere thus may be supplied with moisture, instead of taking it from, and thus cooling, the soil in the pots. In very severe weather, instead of using much artificial heat during the day, it would be better to keep the house covered.

These remarks will apply to all heaths blooming in spring, summer, and autumn. To bring those blooming late in autumn into the list, however, we must suppose them to be kinds that require little pruning, or that that pruning is deferred until the lengthening days of spring. This is on the principle that after pruning back free-growing kinds, it is advisable to break the plants in a temperature some 5° or 10° higher than that they formerly stood in. We have little fear in spring of the heat that comes from the sun, with a free circulation of air in unison, when that air, from being frosty, is not too dry. Anything as respects temperature in summer and early autumn would come more appropriately under a few words on *position*. Any shading and petting they may require during these periods, is more for the sake of the roots than the tops; but whilst the want of much stimulus in winter is a luxury to Cape heaths in general, there is a very useful section that will stand well from 5° to 10° more heat then, namely

The heaths that bloom freely in winter and spring.—This is one of the most valuable sections of the group for all lovers of floral beauty, and who have only one house to depend upon. Wherever there is a brick-pit, or turf-pit for summer use, this section may be managed successfully in a house which is devoted in summer to the growing of a crop of grapes. Many of our economical friends strive to combine the useful with the agreeable, and these come in as nice auxiliaries, either by themselves, or in unison with epacrises, a few cytisuses, acacias, and winter blooming cinerarias, primulas, and bulbs. In such a mixed house they would be quite at home after being settled in the airiest part. Even a

vinery, if allowed to break naturally, would just suit them. An average temperature of 45°, with a rise of from 5° to 10° from sunshine, would not unduly accelerate the swelling of the buds of the vines, while it would be sufficient to open the flower-buds of the heaths freely. The most of them, thus grown, would be fading by the time the buds of the vines had broken, when they might be cut back and pruned. The higher temperature and closer atmosphere would cause them to break freely, and before the foliage of the vines caused too much shade they would be fit to be removed to the brick or earth pit, to finish the growth and ripen the new wood, ready to be brought back again in the beginning of winter. In fact, the treatment detailed as suitable to epacris, would just suit this hardy but beautiful and useful section. The following are a few of those that will answer best for this purpose. The first have small flowers, but bloom most profusely. The second have mostly largish flowers, and bloom also freely.

1st. *E. floribunda*, pale pink; *persoluta*, purple; *persoluta rubra*, red; *persoluta alba*, white; *Caffra*, white; *regerminans*, red; *regerminans alba*, white; *gracilis autumnalis*, red; *gracilis vernalis*, red.

2nd. *E. hyemalis*, pinkish red; *rubra callyx*, white, tipped with pink; *Wilmoreana*, pinkish; *Linnæana*, purplish red; *Linnæoides superba*, purple, whitish; *vernalis*, pink; *perspicua nana*, pink; *cerinthoides*, scarlet; *cerinthoides superba*, scarlet; *cerinthoides coronata*, scarlet, fine; *præstans*, white; *exurgans*, and varieties, orange; *Monsoneana*, white, &c., &c.

R. Fish.

CULTURE OF THE NEPENTHES.

(*Continued from page* 383, *Vol.* vii.)

Situation.—Though these singular plants may be grown in the warmest part of a common stove, yet to grow them finely and to the greatest perfection, a house devoted entirely to them is very desirable. Those who cultivate orchids may manage them very satisfactorily by placing them at one end; in such a situation they thrive well in the orchid-house in the Royal Gardens at Kew, and also in the orchid-house at The Poles, near Ware, belonging to R. Hanbury, Esq. Mr. Rucker cultivated them in a house with a large tank in the centre, in which were grown the better kinds of stove aquatics. Messrs. Veitch, of Exeter, who possess, perhaps, the finest collection in Europe, cultivate them in a house by themselves, and with the greatest success. As a proof of this, we need only refer to the splendid specimens they exhibited last summer at the exhibitions in the Royal Botanic Gardens, Regent's Park, and in the gardens at Chiswick. No doubt numbers of our readers had the pleasure of seeing them, and must have been surprised and delighted with such a grand display of these singularly interesting, curious, and well-grown plants. At Pine-Apple Place they are growing in a propagating-house for stove plants, the heat and moisture of which is considerably more than the stove. There is a tank of hot water under a bed of tanner's bark, which keeps it at a regular high temperature. The pots containing the plants are set upon the bark, and green living moss is worked in amongst the pots, brought up to a level with the rims, and a thin covering over the earth in the pots. In this situation they grow and flourish well. All these instances of various modes of growing them are given in the hope that some one or other may be made available to such cultivators as may read our periodical, and may be desirous to grow one or more of these curious plants.

Soil.—The roots of Nepenthes are black, tough, and wiry, but by no means fibrous; they run amongst the open loose surface in their native habitats, which surface is formed by fallen leaves, bits of sticks, and the moss that springs up amongst and over them, the whole resting upon a rocky substratum, constantly moist by the trickling water descending from the heights. This we imitate by procuring fibrous peat, small stones, half-rotten leaves, and bog moss; the latter to preponderate considerably above the rest. The pots should be well drained, for though these plants love moisture they do not like stagnant water. They will even grow middling well in nothing but sphagnum; but the above addenda will be found to cause them to grow much stronger, and produce larger and finer pitchers.

Propagation.—*By Cuttings.* This once was thought very difficult, but perseverance and art have succeeded in propagating them readily by this method. The best cuttings are made with single buds with a leaf attached. The way to do this is to cut a plant down and divide the stem into lengths, one leaf to each. The cut should be just in the centre, between each leaf; if the cut is made close to the leaf it is almost sure to perish, but if there is a portion of the stem (about an inch or two long) left below it, and the cuttings are placed in right compost, and in a right heat, they are almost sure to strike root. The leaves must be left entire and unmutilated; the least wound or crush will cause them to decay rapidly, and if the leaf decays the bud and stem will surely follow. Young side, or even leading, shoots with two or three leaves on the top, and a portion of the stem below, will strike root if very carefully managed; but on account of the wood in that part being very tender, succulent, and full of sap, they are far more liable to decay than the more woody part of the stem with an older and less sappy leaf attached to each division. The next thing to consider is the size of the pots, and the material in which to plant the cuttings. The pots should be small, not more than three inches across, and a single cutting should be put into each, not in the middle, but close to the side. The material or compost should be made as follows:—sphagnum, or bog moss, chopped very small, finely-sifted peat soil, and silver sand, in equal quantities; place about an inch of small broken potsherds at the bottom, fill in the compost quite level with the rim of the pot and make it firm; then take a short stick, rather thicker than the thickest cutting, thrust this dibber down the side of the pot, draw it out again, and immediately put in the cutting, close the compost firmly to it, and so proceed till all the cuttings are put in. Now, in order to cause them to grow, they must have bottom heat; where there is the convenience of a bed of tanner's bark in good heat, that is an excellent situation for them. Put on it a thin covering of coal ashes or sand, press it down firmly, and set the pots of cuttings upon it. To prevent the leaves from hanging down over the pot sides, tie each upright neatly to a stick, and then cover them tightly with a hand-light; if it has a moveable top it will be the more convenient, because the top can be lifted off easily without disturbing the pots to examine the cuttings; give them water when the compost becomes dry, remove any that may die, and give any other little attention they may require; shade them from the bright rays of the sun, and in this situation they may remain quite close till they show evident signs of growth. Then give a little air daily, and gradually inure them to bear the full light of the day. Examine them occasionally by turning one of the most forward in growth out of the pot to see if roots are formed, and as soon as that takes place give them larger pots, and treat them like the established plants.

By Seed.—It was stated in our first paper on this subject, that the Nepenthes is a diœcious plant, that is, it bears female flowers on one plant and male flowers on another, and that in order to produce seed, it is necessary

to dust the pollen of the male plant upon the stigma of the female. Now whenever this can be accomplished they produce a large quantity of seed, and when that is the case, save it and sow it in shallow pans, in a high temperature; transplant the seedlings, as soon as they can be handled, into nursery rows in a shallow pot, and when they are large enough into small pots singly, in the same compost as that recommended for cuttings. These quickly make good plants, and produce pitchers sooner even than cuttings. T. Appleby.

CULTURE OF THE ROSE FOR EXHIBITION.

(*Continued from page* 400, *Vol.* vii.)

Budding and Pruning.—In our last number the mode of budding upon the wild briar was described. The roses so increased are for growing in the open border, to produce cut flowers for the exhibition table. That kind of stock will answer tolerably also for pot culture, if worked low, that is, budded about nine inches or a foot high on the stock. There is, however, a stock which we think much better adapted for that purpose—it is called the *Manetti* stock, and is itself a kind of cultivated rose. The advantages of using this as a stock are—it is as easily struck from cuttings as a willow; it roots more freely than the dog-rose; it scarcely ever sends up suckers; and experience has proved that the more delicate Bourbon, China, and Tea-scented roses grow much more freely on it than any other, or even than on their own roots. About three weeks ago we visited the rose-garden of Mr. T. Appleby, at the Rosemount Nursery, York, and saw hundreds of the newest and more tender roses cultivated in pots and budded upon this stock. Their growth was really surprising. In a house very gently heated, many that had been budded only last August had made healthy shoots more that a foot long; scarcely any had failed, and all were progressing wonderfully. The good qualities of this stock are justly and highly appreciated by Mr. Appleby, who cultivates it by thousands, both for the purpose of working or budding, and also for sale. He puts in the cuttings in nursery-rows early in spring, and they grow so quickly that they are fit to bud the same summer, will grow the succeeding spring, and be fit to remove in the autumn. This applies to the stocks in the open ground. In pots the operation is still quicker; they may be *grafted* in spring, and be fit to be disposed of, or repotted for blooming, in autumn. The Manetti stocks should be struck in the open ground, or in pots, and be potted singly into 4½-inch pots. If strong enough, they may be budded or whip-grafted as soon as fresh roots are formed. We strongly recommend this stock to our readers, whether they are growers for sale, gardeners, amateurs, or cottagers.

Pruning.—This is a most important operation in the culture of the rose, and requires considerable forethought and experience. The pruning must not be uniform, for some varieties are strong growers, others are weak growers; some bear their flowers on short spurs, whilst the greater number bear them on terminal shoots; hence it is necessary to know all these peculiarities before the knife is applied at all. Fortunately, the varieties requiring such distinction in pruning are easily known, and many of them are very numerous. To understand this perfectly, or, at least, to a degree sufficiently perfect, we shall divide them into such as require close pruning, such as only require moderately shortening, and, lastly, such as require only to be thinned-out, without shortening or cutting-in the leading branches.

1. *Roses requiring close pruning.*—By this term is meant to cut in the wood made the previous year to within three or four buds of the base of each shoot. Under this head we class *Provence* and *Moss* roses, excepting two or three very strong growers, which will be noticed presently; also the *Damask*, *Alba*, *Gallica*, *Hybrid Provence*, *Damask Perpetual*, the *weak-growing Hybrid Perpetuals*, the *weak-growing Bourbons*, the *weak-growing Noisettes*, the *China*, and the *Tea-scented*. All the roses that are classed under these heads, with the exception of strong-growers, require to be closely pruned. The best season for this operation is about the end of February or beginning of March. If pruned much earlier, the buds will break, and probably be caught and injured by late spring frosts. If the heads are crowded too much, thin out some of the weaker old branches, leaving the rest so as to form an open, compact bush.

2. *Such as only require moderately shortening.*—These are strong, robust growers, and if cut in close, would generally produce few flowers, and abundance of coarse strong shoots. They may be arranged under the following varieties:—All the *strong-growing Moss* roses, especially such as Moss *Catherine du Luxembourg*, *Countess de Noë*, *Du Luxembourg*, *Lanei*, *Princess Adelaide*, and *De Vieillard;* also *hybrids* of *Chinese*, *Bourbon*, and *Noisettes;* all *climbing roses*, except the Banksian varieties; also the *strong-growing Hybrid Perpetuals*, such, for instance, as *Comte Bobrinsky*, *Comtesse de Rambuteau*, *Gloire de Rosamene*, and such like; the *strong-growing Bourbon*, and the *strong-growing Noisettes*. These require the shoots to be thinned-out, and very little shortened; the season for the operation in early spring.

3. *Such as require only to have their shoots thinned-out*, leaving the moderately strong shoots without pruning in scarcely any. Under this head we include the *Scotch dwarf roses*, the *Austrian Briar*, *Harrisonii* and *Persian Yellow*, the *Sweet Briars*, the *Banksian*, the *Rosa multiflora*, the *Macartney*, and the *Perpetual Scotch*. These require only their strong, over-robust shoots pruning clean away, and the best time for the operation is about Midsummer. The moderately-growing shoots should be kept growing until they reach the height of the wall or paling, excepting the Scotch varieties (*Rosa spinosissima*), which are dwarfs, and should be grown on their own roots as compact bushes. When the shoots of these become long, weak, and straggling, cut them in pretty severely, sacrificing one year's bloom for the sake of throwing fresh vigour into the plants. This may require to be done once in five or six years. If the others become naked towards the bottom, train in a fresh strong shoot or two from the bottom of the trees, thinning-out some of the weakest branches to make room for the young strong shoots; and as these advance from year to year, clear away the exhausted old shoots to make room for them. Do this gradually, or there will be few flowers, till they become furnished with weak flower-bearing branches.

T. Appleby.

(*To be continued.*)

EARLY TURNIPS.

Notwithstanding the general hardihood of this plant, there are few things more difficult to procure at an early period than good sweet turnips; and the many mishaps the first sowing is subject to renders this crop more precarious than many others. True, the seed vegetates as quickly as any seed, but birds, slugs, &c., seem to regard these seedlings as their own, and very often the result proves their claims to have been well founded. But another enemy too often assails them, and that is cold, ungenial weather, and we have so often witnessed its baneful effects, that we are converts to the popular belief that a very slight touch of frost, while the plant is in

seed-leaf, causes it to run to seed afterwards, before it forms anything of a bulb; in what way to account for this we are at a loss, but as we would rather retard this part of the progress, we must protect our crop from this iron king's forcing properties; and as a bunch of nice young turnips are always acceptable in the kitchen, we must see what can be done to hasten them on.

Some cultivators sow their first crop under trees, thinking the shade lessens the tendency to run to seed, while others sow on the warmest border they have, and are too often deceived by the whole crop showing blue in the centre all at once—a sure sign of their running away; while, on the other hand, some sow on some prepared bed under glass, and, forgetting to give them their due of water, &c., are mortified by the same results; while the patient horticulturist sows his seed on some border not too dry, and, spreading a few boughs over the ground, is enabled to cover his crop up at nights with garden mats, but even that is not always a successful mode of doing it; so that, after adopting many plans, we have found out that early sowing is rarely to be depended on, and we seldom sow the principal spring crop before the first of April. A small quantity is generally sown before that time on a bed prepared by digging a sort of trench, which is filled with leaves, or other gentle heating matter, over which the soil is spread, and the seed sown, and defended from cold rains, frosty mornings, &c., by any contrivance we find handy at the time, and often a few boughs supporting garden mats serves the purpose pretty well. Of course glass would be better, but the many demands there are on that article at this season makes it very scarce. We must not omit to mention that good new seed is also indispensable, as it is less likely to run away than that of older date. The best variety is the *Snowball*, it being more globular in shape than the *Dutch*, but the latter is equally hardy, as is also the *American Stone*. The principal merit is earliness, and the quality of resisting that natural tendency they have to run to seed, which they sometimes do when least expected, and as it were from mere motives of caprice; certainly sudden atmospheric changes, or a lack of moisture at the roots, may have a great influence in the matter, yet we know of no other crop over which we have so little control as this, unless we adopt the extravagant plan of growing them under glass, which the requirements of other things are likely to deny. We therefore advise our amateur friends to sow their early turnips in more places than one, so that if one fails (as may very likely happen) another may succeed, besides which, they must not forget to sow in succession as well, and to be sure to guard against those insidious enemies the slug, fly, birds, &c., to which the cabbage-wort family are exposed.

We remember once sowing a plot of early turnips in a very wet spring, in which the first-named of these marauders abounded in great numbers; and a large dog, who by virtue of some of his real or imaginary services had access to the garden, took a fancy to make the turnip bed his basking place, and presently had flattened the centre of it as hard as a road-side footpath: this was just before the plants made their appearance. Incensed at what I thought an irretrievable injury, I had the dog denied the garden, and contemplated re-sowing the spot, but other pressing work prevented it being done immediately, and the seed vegetated, and though with lime, soot, and other preventives, we tried to save our crop, the part on which our canine friend had operated was the only one where we could save a plant, and on it they did well. This lesson, like that of many others (the result of accident), I determined not to throw away, and have frequently since had recourse to beating or flattening the top of beds of seeds of that kind; but the above case was one out of the usual way—the ground was naturally stiff, and a wet spring had made it advisable to lay it as open as possible, in order to benefit by the kindly influence of the atmosphere; but then its openness afforded so many retreats for those enemies of infant vegetation, that a medium less congenial to their growth seemed the only one capable of saving them from annihilation; and that sealed-up condition of the ground, though unable to prevent the expansion of the cotyledons of seeds near its surface, was such as to present a barrier to the upward advances of those enemies ensconced below, until such time as the plants were better able to resist their attacks.

Sundries.—The fine dry weather in March has made the ground in fine order for sowing, or planting, anything the season requires, so that we suppose the cultivator will have put in all his spring crops. If not, we entreat him not to delay another day in sowing or planting everything which has not a tropical origin. Of this latter class are *Kidney Beans*, ridge *Cucumbers*, *Marrows*, &c., but these things must be forwarded under glass, in order to plant out when all danger from frost shall have passed away; but seeds of *Basil*, *Sweet Marjoram*, *Savory*, &c., may now be sown in the open ground, and, if not done before, the principal crop of *Celery* ought also to be sown, and a part of that sown under glass some time ago must be forwarded by pricking out in pans, boxes, &c., prior to finally planting out at the end of the month. The principal crop of *Carrots* may now be sown, and *Peas* and *Beans* sown in succession, as likewise must *Lettuce*, *Cauliflower*, and sundry other crops, besides which due attention must be paid to order and neatness in all that is done. J. Robson.

THE GOLDEN AND THE SILVER PHEASANTS.

(*Continued from page* 404, *Vol.* vii.)

Of hybrid golden pheasants, M. Temminck thus speaks:—

"Another sort of mongrel, much more difficult to obtain (than that between the common pheasant and the common fowl), is the offspring of the golden pheasant with the common or Colchic pheasant. This bird, adorned with a dazzling livery, has lived several years in my menagerie; its skin is now in my cabinet.

"The bird I am now describing is the produce of a male golden pheasant with the hen of the common pheasant; its magnificent plumage, adorned with the most brilliant colours, is not inferior in beauty to the elegant attire of the golden pheasant.

"This hybrid was not hatched in my menagerie. I obtained it from a dealer in birds, who offered it to me as a new species of exotic pheasant; a fraud which was made plausible by the novelty and brightness of the colours which overspread the plumage of this bird. I managed to prove to him its true origin, and he ended by confessing that he had procured it from a menagerie in Brabant. Being curious to make experiments with this pheasant, I bought it; my intention was to assure myself whether it were a sterile or mule animal. I immediately lavished upon it all sorts of nourishing and stimulating food; it was confined in a ward communicating, by means of some bars, with one containing some hens of the common pheasant, which I judged fittest for the purpose; towards the time of mating, I allowed him access to the ward with the hens. They were not ill-treated; on the contrary, the natural impulse was expressed in an unequivocal manner by the actions of the male; the naked part of the cheeks was coloured with a livelier scarlet, &c. When I found that no young were produced with the hens of the common pheasant, a second year I tried hens of the golden pheasant, with the same result. Every experiment I tried, confirmed me in the opinion that this mule bird was unfertile.

"I have since made many attempts to obtain similar mules from the male golden pheasant, and the female common pheasant, but all my trouble has been thrown away; the eggs which I obtained were almost always clear.

"Buffon mentions two hybrids which he obtained from

the hen golden pheasant, and the male of the common sort; the result was two pheasants much resembling ours, still with badly tinted plumage, and with only a few yellow feathers on the head. These two young male hybrids having been put with common pheasant hens, from one was produced a female chick which always remained unproductive, the other cock continued unproductive for four years that observations were made upon him."

M. Temminck gives a long and minute description of *his* hybrid bird, which it would be of little use to translate here, as no two such hybrids would probably be exactly alike.

The chick of the silver pheasant, when first hatched, has not any very decided markings. The back is irregularly streaked with umber brown on a light fawn ground, after the manner of tortoise-shell, and the under parts are light. The feet and legs are a pinky-yellow, the claws white; bill light horn colour; eyes large and full, and dark brown, with a lighter iris. From the outward corner of the eye is a narrow dark-brown stripe, extending downwards partly down the neck. When the chicks issue from the shell, the feather-cases of the quills are fully developed, with the feathers protruding from the tips of some of them. These, as well as the wing coverts, grow with great rapidity, while the tail-plumage makes no progress from the state of down. Thus the urgent wants of the creature are first provided for; the instruments of flight are given to it, and then, and not till then, superfluities of clothing and adornment are added. At this early stage their diet seems to consist entirely of insects and green vegetables.

It does not appear a good practice to hatch common chickens in the same brood with little pheasants, as is so generally done with turkeys, for they devour the delicate ingredients of their mess, such as ant's eggs and minced meat, with so much greediness, as materially to diminish the quantity left for the deliberate-eating pheasant-chicks. They, in fact, starve them to death, by appropriating so large a share of their indispensable allowance of dainties. One of these is fresh beef chopped fine. The chicks are apt to refuse groats and farinaceous diet, but are better pleased with ant's eggs, together with hard-boiled eggs minced with lettuce-leaves. For adult birds, buckwheat is good food; but they do well on wheat and barley, with a few white peas occasionally, in the early part of the year.

Mr. Blyth informs me that numerous pheasants, too, have the same habit (as the fowls mentioned in Ornamental Poultry, p. 278, second edition), of retiring to take a nap at noon; "but," he adds, "you must know what an Indian jungle is, before you venture to *pot* them, at roost, as you suggest!" The caution is kindly meant, if the pheasant jungles are frequented by the same pleasant company as those where the still more gorgeous pea-fowl dwell. These, he says, "are abundant in Indian jungles; and wherever this bird and the Axis deer are very numerous, there *tigers* are sure to abound also."

(*To be continued.*)

PRACTICAL OBSERVATIONS ON THE MANAGEMENT OF BEES.

By Henry Wenman Newman, Esq.

(*Continued from page* 407, *Vol.* vii.)

INSTINCT OF BEES.

Apibus partem divinæ mentis.—Virgil.
(To bees is given of the divine mind.)

This is a point on which there are different opinions; some naturalists degrading the insects' faculties as if they were mere automatons. Certain it is, however, that Divine wisdom has endowed these insects with most extraordinary acuteness. No bee which is unable to work is suffered to remain an hour in the hive; any bodily defect in a worker is instantly perceived, and it is expelled. How often have I placed a disabled bee at the entrance, but the moment the guards come up to him, his unfortunate situation is known, and he is again carried out and dropped—if a stranger, instantly killed.

In showery weather, when the bees are knocked down and benumbed, I have picked up hundreds at different times, and placed them near the door. The guards immediately run out, and as quickly offer each benumbed bee every assistance, and all allow it to "pass muster" if belonging to the hive. This quickness of perception is astonishing, and it is exemplified in the same manner if an attempt be made to introduce a strange bee from another hive, which they immediately attack and kill.

I mentioned in another place my successful endeavour to introduce a strange queen into a hive which had been ready to swarm for a fortnight; at any other time the stranger would have been instantly expelled; but mark the unerring instinct of these wonderful insects—the guards rush out, surround her, and are in the act of seizing her; the bees know they are in want of a queen, and she is admitted. Is this like a machine? A most intelligent man whom I employ, who has kept bees for twenty years, was present, and saw me take the strange queen out of the dying stock, and place it in the other, and expressed his astonishment, having never seen it done before with success; and he was still more astonished when he visited my garden next day, and found that this "long-hanging-out stock" had thrown a fine swarm. That the Great Architect of the universe has endowed the insect tribe with more wisdom than their size seems to warrant is quite clear.

In that beautiful book, Kirby and Spence's *Introduction to Entomology*, it is advanced that the bee finds its way to the hive by instinct merely! this, with due deference to the book (which every naturalist should read), is a mistake. I will endeavour to prove that it is entirely from observation, or, as some of the phrenologists would term it, from the *organ of locality* being most strongly implanted and developed. The first exit of a bee from the hive is made with the greatest caution, and it is a long time hovering about the hive before it departs; and, when it does, its journeys are very short until it has been out several times, when it becomes acquainted with the locality, and then goes out and returns quickly.

I was first convinced of this by my passion for wild bees when a boy, being fond of taking their nest, and colonising them in my garden. On opening my hives and boxes in the morning, after their imprisonment all night, nothing was so gratifying as to see these humble bees come out, generally one at a time, making great observation of all the objects round them, so as to know their way back.

The instinct of bees is shown in the West Indies. In Barbadoes the bees never collect honey in the same quantities as in this climate, for in the tropical climate the flowers abound all the year round. This is another proof of strong intuitive knowledge of climate.

SENSES OF BEES.

Many writers have asserted that bees have not the faculty of *hearing*, but this is no doubt a mistake. If not a mistake, what a deal of trouble has been taken by many people, from time immemorial, in making the world believe that bees do hear, by beating frying-pans, bells, and kettles! That they are *dumb* completely when bereft of their wings there is no doubt, the same as nearly all other insects.

That intelligent writer, Dr. Bevan, is of opinion that their *sight* is defective, from their not finding their way into the hive sometimes so quickly as they ought; but when it is considered that in a populous hive (of a circular form) hundreds of bees are born every day, that have each to make the same observations as to the locality, and the whole country round, it is not to be wondered at; besides, there are other reasons—bees work so hard, that they frequently return in loaded, and in a most exhausted state, to the hive.

In Kirby and Spence's *Introduction*, vol. ii., page 203, a strange mistake is made respecting the instinct of bees. It says, "The bees do not usually sting me, but I remember one day last year, when the asparagus was in blossom, which a large number were attending, I happened to go between my asparagus beds, which discomposed them so much, that I was obliged to retreat with hasty steps, and some of them flew after me; I escaped, however, unstung." Whoever wrote this knew nothing of the habits of bees *when away from their hives*, as they never sting when disturbed at their pasture. Any one may venture into a field of Dutch clover in full bloom, where ten thousand bees are congregated, and

he may take his handkerchief, and strike them in all directions with impunity. In return, they will only buzz about the head for a short time, as much as to say, "Why will you not let us feed in peace?" and then be off. Even the wasp, much more vindictive than the bee, will not act on the offensive under the same circumstances.

Bees are not so apt to sting women as men; the dress has probably something to do with this. There is a notion that they take dislikes to particular people;* this is oftener the effect of fear than any other cause, as they are sure to find out if any one is afraid of them. When a bee seems inclined to sting, the party should stand perfectly still, or retreat very slowly to the shade of the nearest tree or bush.

Necessity seems sometimes to deprive the bees of their usual instinct. In one of the cold ungenial autumns of 1838-39, the bees had little honey in their hives. There was a great deal of wall-fruit, and the bees attacked it in the same predatory manner as their enemies the wasps, particularly the plums and peaches. I never observed them do so when there had been a *good honey-gathering year*, so that it seems to be a matter of necessity altogether; for I well remember the last time that I observed the bees busy at the wall-fruit, a great many bees were killed by bee-keepers, which were found full of brood, and not above two or three pounds of honey, at the end of August. At this time I observed the bees busy at the ripe peaches and plums.

* They certainly dislike any one in a strong perspiration.

GAS-TAR WALKS.

In your last volume, page 99, I perceive Mr. Fish has been using gas-tar for garden-walks. I had thought it so common an article for that purpose, that I supposed you and all your readers well acquainted with its use, but from Mr. Fish's method of using it, I see that he has not used it to the best advantage, therefore I take the liberty of sending you a few particulars, which I have picked up from the experience, not precisely of myself, but of men who have made a great deal of the article, and are well acquainted with all the different methods of making it.

It is a very common material here (Derby), and still more so at Nottingham, where they not only use it for foot-paths, but for horse-roads, and where they have arrived at the greatest perfection in laying them down; and it is their method of doing so that I shall describe, which is this:—

The materials are *gravel* and *gas-tar*. The gravel for foot-paths must be the common fine gravel used in gardens, with as little *dust* amongst it as possible. This must be procured some time before it is wanted, and laid under cover, and turned occasionally, to get it as *dry as possible*, which is the *great secret* in making a good road. Fine weather must be chosen for mixing, when the gas-tar is to be mixed with the gravel in just sufficient quantity to give every pebble a little, and no more; and this can only be accomplished by *well mixing* and *turning about*, and doing only a small quantity at once. This is the second great point. The third is, heavy pressure when laid down, the road having been previously well rolled or rammed, so as to have a solid foundation. It may be laid on from two to three inches thick, according to the traffic, and a little fine gravel sprinkled over, to give it a fresh and pleasant appearance. It should be rolled occasionally until set, which, if the two first points are carefully attended to, will be very soon, say, in favourable weather, in about a fortnight. It should not be attempted in frosty weather, as it is certain to fail in making a good and level road.

For horse-roads, larger gravel may be used; and that would be improved by being broken as for a common Mac Adamised road; ashes are to be avoided, as they and the fine dust of gravel absorb the tar, and during a hot day the road is swimming with tar, in consequence of the ashes giving out the tar again. This also is the case when there is too much tar used in mixing.

When the road is made good, there is no end to the wear of it as a foot-path. We have one at the factory that has been in use for six or seven years, with 400 or 500 hands passing over it from four to six times a day, and also all the coals and ashes consumed and made on the premises. It is now as good as it was when first laid down, but it will end its existence very shortly, as we have already cut up part to let in the water-pipes, and in consequence of an alteration in the road it will have to be raised. We shall lay gas-tar down again when we do it.

There is an objection against its being used to much extent as a horse-road, as horses are so liable to slip on it. At the factory we are always obliged to spread fine ashes when we do any carting, as it is worn so smooth by the people's shoes that the pebbles are quite polished, and the horse slides about as if he were on ice.

A good road will bear sweeping like a wooden floor. Our road at the factory has been generally swept out every day since it was made, which is a great recommendation as a garden-walk. No water ever can go through it, nor will weeds or worms penetrate. The latter have a decided objection to the gas-tar. In these respects it is quite equal to Mr. Beaton's concrete walks. It is only inferior to them as a horse-road.

Gas-tar costs here 2d. per gallon, buying an odd gallon, but if any quantity is used, they charge 1½d. The Nottingham people charge from 9d. to 1s. per yard for the road laid down, while flag-stones cost from 5s. upwards, according to the thickness, and are no better in any respect.

If I can gather any more information on this point you shall have the benefit of it, if you think it likely to be useful to your readers. A. M.

[Press of matter alone has delayed the insertion of this useful suggestion. We shall be glad of any additional information now that the walk-making season has arrived. —Ed. C. G.]

METHOD OF CURING NORTHUMBERLAND BACON.

I have often been astonished that the manner of curing Northumberland bacon, which has now gained much and deserved celebrity, has never been, at least not to my knowledge, made known through the medium of the many works and periodicals which are devoted to the advancement of domestic economy. Trusting that the same may be acceptable to many of the readers of The Cottage Gardener, and also within the province of that most excellent paper, I will endeavour to explain the process; with the expectation that my fellow cottagers may be benefited thereby, which is my sole inducement in writing on the subject. I may be induced in a future paper, should I find it acceptable, to give an account of the most economical way of cooking and preparing the many good things termed "offal," attendant on the slaughtering of a cottager's pig, as practised thus far north; for the cottagers, as is well known, in this county have long been renowned for their industrious habits, good household management, and the tact of making the best out of everything relating to domestic cookery. To confine myself at present to the curing of the bacon, I may commence by informing my readers that the hair, or bristles, are all scalded off, though in Hampshire and some other southern counties it is burned off, which is said to be one of the principal reasons why Hampshire bacon is renowned for its excellence; but this I cannot judge of, never having the good fortune of tasting or comparing the two kinds together, though I have compared it with Irish, Cumberland, and other bacon, and found it far superior.

The pig, after being killed and hung about twelve hours, is then considered to be fit to be cut up, having then got cooled, though this I consider not at all necessary, for many prefer it slightly warm in the inner parts of the flesh, than too stiff and cold, when occasioned by frost, as the salt does not then penetrate the flesh so well. After the pig is cut in two, down the middle of the back, the whole of the ribs are then taken out, together with the backbone; the sides are then considered ready for salting, which is done by turning each with the skin side uppermost, and rubbing them well with the hand, or, what is perhaps better, with one of its ears, with the hair on, for about six or eight minutes, or until the salt begins to melt, or liquefy, on the skin; the side is then turned over, and a slight rubbing given to the flesh side; the flitches are then considered to be fit to put by for curing. They are usually laid on some

clean straw, or, what is better and more cleanly, the straw put into a large sack, not too full, and trod on until it becomes flattened, when the sides, being well rubbed with salt, as recommended above, may be laid upon it. The usual place where they are cured is in the dairy, or any other cool convenient place, and the quantity of salt and other ingredients are as follows, namely:—The quantity of salt used is a pound to every stone of pork, *i.e.*, if the pig weigh fourteen stones, then a stone, or fourteen pounds, of salt is used, and for a pig of that weight about an ounce of saltpetre, the same of bay-salt, and a pound of brown sugar, and so on in proportion to size or weight. The half of these quantities only is used when the flitches are first laid by for curing, and the remainder at the end of ten or eleven days, when they are turned, that is, the undermost flitch is laid at the top, and they then remain for other ten days, which makes in all three weeks. Of course a pig of thirty stones takes more time in curing, four weeks being considered as sufficient time. Care is always taken to exclude the air as much as possible from the flitches during the process of curing; for this purpose any old blanket, quilt, or sack, is used to cover the flitches with, and a wood deal is laid on the top of all, with heavy weights on it, which causes the flitches to lie more level and firm, thereby preventing the brine saturating the thinner parts too much, and equalizing the effects of the salt. Care is also taken to put double the quantity of salt, &c., on the hams than on any other part. After thus lying for three weeks or a month, according to size, they are then hung up in the kitchen, in order to dry, "no smoking being allowed," for the space of three weeks, and if not then allowed to be bacon to set before a queen, those that try it and find it not so, may brand me as the greatest deceiver who ever contributed to The Cottage Gardener.

Llebig.

LEAVING POTATOES IN THE GROUND.

I have just read the communication of your correspondent B., in The Cottage Gardener, vol. vii., page 346, and I beg to record my experience on this subject. Wishing to try an experiment which was recommended, I believe, in your pages, I left a portion of my potatoes in the ground, and only dug the last of them on the 21st February. They were of the description known here as "Prince Regents." At the time when I took up the greater part of my potatoes, I covered those which I intended to keep through the winter with about four inches of extra soil. I do not gather from "B's" communication that he took any such precaution, and I am not surprised at his potatoes being rotten. I commenced digging these protected potatoes about the 1st of December, and have used no other until about a week ago. I am sorry to say my protected potatoes are now finished, but the experiment, in my case, has been so perfectly satisfactory, that I intend to adopt it extensively this year. I intend to take up every other row at the usual time for taking up potatoes, and to cover the remaining rows with from six to eight inches of soil. Having adopted many, if not most, of the recommendations in The Cottage Gardener as to the cultivation of potatoes, I can speak from experience of their value. I have had abundant crops, and considerably less disease than my neighbours. I may add that I did not find potatoes planted in October, 1850, any better than those planted in February, 1851. My seed potatoes I select from those taken up at the usual time. I would strongly advise B. to give the experiment of preserving potatoes in the ground another trial, not for the purpose of providing himself with seed, but for regular consumption, and I shall be glad to hear that it succeeds as well with him as with me.—Wm. E. Howlett, *Kirton in Lindsey, Lincolnshire.*

LABELS FOR PLANTS.

I have not yet found anything superior to the plan which I adopt, and which has stood the test of more than ten years. I always keep some good white lead, rather thick, in a small earthenware pot, and pieces of zinc cut according to the sizes wanted; a little of the paint is smeared on the upper part of the zinc, and *while wet* is written on (in rather a round hand) with a black-lead pencil; this soon dries, and is then quite fast. For geraniums and other plants, *in-doors*, they will keep legible as long as is necessary, and out-of-doors they will continue so for several years; and are very easily re-written, merely scraping them again with an old knife, and applying the paint and pencil as before. I think this plan is the simplest, plainest, and easiest of adoption, that I have yet heard of. If the zinc pieces are made rather long and tapering, the ends are easily bent round the branches of roses and other trees.—E. C., *Chelmsford.*

TO CORRESPONDENTS.

Clearing Cider.—*A Ciderist* obligingly answers "An Enquirer." "1. Put one ounce of isinglass (previously soaked in water), and dissolved in one quart of old cider, into the cask, stirring it in well; let it stand a week or two. This is sufficient for one hogshead. 2. Toasted bread is also recommended. A common-sized loaf, cut into slices and *well* toasted. This allowed to soak, not only clears, but gives the cider a good colour."

Cochin-China Fowls Hatching (*Evesham*).—I have known Cochin-China fowls hatch two days too late (also one day too soon), but never later than that, and have attributed the delay either to staleness in the eggs, or unsteadiness in the sitter on beginning to sit.—*Anster Bonn.*

Poland Fowls (*A Subscriber*).—I think the golden Poland as good layers as the black. I have known nine hens lay thirty-six eggs per week, which is good produce, although less productive than the Cochin-China. I have found them as strong and as easy to raise as other fowls.—*Anster Bonn.*

Gentianella (*Anna*).—Your letter corroborates our own experience for the last twelve years. The Blue Gentian, *Gentiana acaulis*, is not worth looking at in a chalk soil, and no compost that you can use over chalk will ever make this plant flourish. We know edgings of it now thirty years old, of which nine or ten inches must be cut away from each side every spring, otherwise it would run over the garden. These edgings never miss flowering as thickly as daisies. The soil is rich, strong, deep, and moist below.

Tropœolum canariense (*Ibid*).—No plant grows more freely than this; any soil, rich or poor, will do for it, but of course a rich soil suits it better. "It grows very sadly with you in pots, and in the borders." A sure sign of something which we do not like to say. Make holes a foot deep and ten inches across, where you want to plant it this season, and get a man to fill them from the sweepings of the road or street, if he cannot get better, and our word for it they will grow fast enough. Mind the plants must have plenty of watering till after the middle of July.

Neighbour's Hive (*W. A. E.*).—Do not put the glasses upon your Neighbour's improved cottage hive until the bees show evident signs of want of room, and then let there be a small piece of guide-comb fixed at the top of each glass, and the bees will, in all probability, commence working in the glasses the day they are put on, and, if so, there need be very little fear of their swarming; but they must *work* in the glasses. If you put on an cke, it must not exceed two inches in depth, or the bees will forsake the glasses. A wood hoop, with adapter top and bottom, will be more convenient than straw. Paint inside a box would annoy the bees exceedingly.

Anemone Beds (*Viola*).—Certainly, the anemones can be removed to a reserve garden as soon as the flowers are gone, and, if handled very carefully, will take little hurt; but amateurs often destroy plants that way for want of knowing the practical mode of handling them. Nothing seems more easy and simple to do than laying bricks, when we see a man at it, but what a mess any of us would get into if we were to take the trowel; and it is just so with everything else—we must spoil things before we can get into the right way, even under good instructors, like the writers in The Cottage Gardener. Let the bed be well watered two days before you move the roots, and in their new bed let them not feel the want of it for an hour till the leaves turn colour. Very much depends on the watering.

Rhubarb Wine (*A New Subscriber*).—We sent your query to a good authority, and thus he replies:—"Abernethy was accustomed, after listening somewhat impatiently to long catalogues of complaints, thus to address his patients—'Read my book—at page so-and-so you will see your case exactly.' So, in the case which you refer to me, I think you should say, 'Read my book!' For in *vol.* iv., *pages* 293 and 319, of The Cottage Gardener, your correspondent will find plain directions how to proceed in order to ensure a wine good, effervescent, and wholesome. She (I presume 'A New Subscriber' to be a lady) will there see that the addition of brandy will only make 'grog' of her wine, and is, therefore, worse than useless,—that water *is* necessary, to form a good artificial 'yeast,'—that the addition of yeast is unnecessary, nay, prejudicial,—and, above all, that she might as well venture to sea without a compass as to try to reduce wine-making to a *certainty* without a saccharometer. 'A New Subscriber' seems earnest in the matter, and is evidently not discouraged by difficulties. Let her then, by all means, try again next June; let her buy Vol. iv. of The Cottage Gardener, proceed as there directed, order a saccharometer (Roberts' only costs 6s.), and if she follows directions she will be sure to succeed. If I could know the specific gravity of the wine made last year by the saccharometer, I could offer an opinion as to its future treatment; without this knowledge I cannot."—H. W. Livett.

Budding (*S.*).—Yes, the statement to "all buds whatever"—apples, pears, plums, cherries, &c., and all fancy plants that come from budding—we referred; or suppose all the trees and bushes in the world could be increased by budding, we would not remove the thin slice of wood from

behind the bud of any of them. Theory says, remove all the wood; but in our practice we know no theory could be more successful.

Greenhouse Lights (*L. M.*).—The party is making calculations now, and will soon introduce the subject by advertisement in our columns.

Mowing Machine (*Queen Mab*).—Budding's machine is the right size for you; the other is worked by a horse on extensive lawns. We do not know the price of either.

Crossing Dielytra (*F. P. S.*).—"Having a method of your own" for crossing, by all means apply it to this beautiful plant. The parts for crossing, among Fumeworts, are in dispute among the learned, some saying they have four stamens only, others that there are six. You will find the parts very curiously contrived. The stamens are *diadelphous*, or in two bundles; the real flowers never open, and the dispersion of the pollen is effected by an effort of wonderful intricacy. Disengage the tips of the flowers, and extract the anthers before the pollen is ripe, and if you could find *Fumaria eximia*, or *F. formosa*, either of them would, in all likelihood, cross with the *Dielytra*. Pray let us hear of your mode, and your experiments with the Fumeworts.

Rustic Flower Baskets (*M. Morgan*).—Mr. Pryor, Cricklewood, Edgeware-road, London, and Mr. Thomas, Westminster-road, Kennington, London, are rustic-work manufacturers. Either of these persons will supply you with rustic baskets, such as you require, and will answer any inquiries as to price, &c., you may send them.

Primula Sinensis Fimbriata (*F. W. T.*).—You say this does not seed, yet flowers well. This is very unnatural, and your plants are wrongly treated. To produce seeds, healthy plants, light, air, and moisture, are the means nature uses. According to your account of your treatment, we suppose you fail because your plants are deficient of strength to produce pollen. Set one or two out-of-doors, fully exposed to the sun; impregnate them by dusting the pistil or stigma with pollen; protect them with a covering of some kind from heavy rain till the seeds are set; then expose them till the seed is ripe; gather it, and sow it immediately. By such means we think you are sure to succeed.

Hens Egg-eaters (*A Young Hen-fancier*).—Your fowls have indeed acquired a very bad habit—that of eating their eggs; but as you mention the poorness of the egg-shell, are you *sure* you do not blame them more than they deserve? for if the eggs get broken by accident, the best hens in the world will hardly withstand the temptation to eat them. I can only advise you to have the hens constantly watched for a time; let the eggs be removed as soon as laid; and if a hen be found trying to break the shell (provided she is too good to have killed), take a very light switch, and beat her, gently of course, but enough to make her feel. It is a funny idea to beat a hen, but I have by this means banished as bad a trick as your hens—that of plucking and eating their own and their companions' feathers.—*Anster Bonn.*

Cochin China Fowls.—*Anster Bonn* would feel great pleasure in aiding *Clericus* in his wish to place Cochin China fowls in the hands of cottagers and small farmers, if that gentleman will forward his name and address, under cover, to the editor of The Cottage Gardener.

Snow's Winter Brocoli (*W. Salcombe*).—Sow it now, and in the last week of the month.

Worms (*Theresa*).—None came with your note.

Scale (*J. N., Omagh*).—Your Correa is indeed miserably affected, and, we think with Mealy Bug. Sponge its leaves, &c., well with a mixture of soft-soap, 2 oz., flowers of sulphur, 2 oz., tobacco, 1 oz., and a dessert spoonful of spirit of turpentine. Mix the sulphur, turpentine, and soap into a paste with warm water, boil the tobacco in some more water for an hour, in a covered pot, strain and mix the liquor with the soapy compound, and add two pints and a half of water. Keep your plant away from all others. Mealy Bug will attack almost all greenhouse plants.

Heating Tank (*Ab Initio*).—Your present plan will answer. We should have an iron pipe four-inch diameter merely in the shape of the letter U, the curved part over the fire. It would keep a tank six feet square quite hot. Your fire-place, &c., should have a roof over it. Charcoal varies in price everywhere.

Guano Water (*F. W.*).—If the guano is genuine, half-an-ounce to a gallon of water is sufficient; it may be applied to roses and other growing plants once a week.

Gutta Percha Hose (*H. W. M.*).—This is very useful for distributing water to distant parts of the garden, but a fall of ten feet would give you no jetting power so as to dispense with any length requisite for a mere level. We prefer irrigating the roots thoroughly, rather than showering water upon plants by a jet.

Tobacco (*A Friar*).—That of English growth answers well for fumigating plants. Mr. Carter, High Holborn, probably has seed of it. Any variety does. For drying directions, see our 102nd number.

Unhealthy Cucumbers (*A Constant Reader*).—Pipes passing through a trough for bottom-heat, we do not think will cause cucumbers to start and go off and the foliage of other plants to discolour; neither do we think the tank would improve the matter, and we suspect there is something else at fault besides the heating which seems to us quite sufficient for the purpose, if there is plenty of it. We have found no difficulty with water circulating in a tank—with pipes passing through a tank—or merely with pipes passing through a lot of stones or rough rubbish; but in this latter case it is necessary to have some means, such as earthen-pipes, &c., rising through the bed, so that by pouring water into them, you may always command moist heat among the stones, at pleasure. In this case, as also over tanks and troughs, if a little sweet dung is not placed beneath the soil, the bottom should be covered with turves reversed. When we can get it, we prefer a little sweet dung, and we have never any difficulty. We see no reason why you should make a tank, if we understand your sketch, by using the manure, as the thick turf, or a sufficient thickness of soil. There will be no danger of your roots suffering.

Pits (*E. H., Hampstead*).—We think you are acting quite right. Such pits will answer well for any purpose,—for keeping bedding plants in winter, and hardening off those things you have now sown. You must not expect many melons from your one-light dung-bed; but after raising the plants you might appropriate the two-light pit for that purpose. As to a heating medium for these pits, nothing is better than sweetened dung; but tree leaves, tan, refuse of flax mills, spent hops from a brewery, will do equally well if slightly sweetened. Much has been said of modes of heating artificially, without fermenting matters.

Magnolia (*Ibid*).—We presume the one you refer to is *grandiflora*, and instead of being on a lawn, it would be the better for the shelter of a wall, south or west.

Oleander (*Ibid*).—See what was said lately. Do not remove the buds if they are fresh; if not so, cut down, as advised lately, and get the plant plunged in the bed which you mean to use for hardening off your tender seeds and cuttings. If the buds are sound, they may yet expand in the heat indicated and under the treatment so lately detailed.

Cuphea platycentra (*J. S. L.*).—This should not be over-watered in winter, whilst in a young state, in a cool greenhouse; when two or three years old it stands rough treatment, but many of the old leaves will then get discoloured; but what matters it, so long as a whole bevy of fresh ones will succeed them, and flowers in abundance? If you wish to have it nice and green all the winter, the temperature must not often fall below 45°; but if the greenness is no object, from 5° to 10° decline of the temperature may be safely permitted.

Dench's Greenhouses (*Ibid*).—We think we understand the plan referred to, but anything particular that strikes you as being more than ordinarily superior and cheap, we should be obliged by knowing more perfectly, as economy, when it does not interfere with utility, is always a recommendation.

Botanical Exchanges.—"Doubtless, among your numerous readers, there are some who, like myself, have collected almost all the plants in their neighbourhood. It appears to me, that by corresponding the one with the other all might be benefited. I know that nothing would please me better than to exchange the plants of my neighbourhood for those of the glens and moors of Scotland, the mountains of Wales, or the genial climate of Devonshire. Now, perhaps, there may be persons living in those localities who would experience the same pleasure in receiving the plants peculiar to the South Downs. Again, are there not botanists living in the midland counties who would gladly give their plants for those of the coast? Could you not, Mr. Editor, bring about this 'consummation so devoutly to be wished,' by publishing in some corner of The Cottage Gardener the address of parties wishing to exchange botanical specimens?—*William Bridger, 4, Tower Street, Chichester.*" We shall readily insert the names of such parties.

Boiler.—*W. Harrison* would be glad to know where, for £1 14s. 6d., he can obtain the boiler mentioned by "An old Subscriber," at page 361 of vol. vii.

Game Fowls.—*H. H.* may apply to *Mr. Haslewood Smith, Handsworth, Birmingham.*

Grass under Trees (*R. Campbell*).—No grass will grow well under deep shade. If the lowest branches of the plantation are removed, the surface raked now, sown with the seeds of *Poa nemoralis* and *Poa trivialis*, you will have the best covering such a situation can obtain. If those grasses will not succeed, then plant periwinkle (*Vinca major*). It makes a beautiful covering for the surface.

Hothouse (*G. L.*).—Glaze with Hartley's rough plate glass. Have the top lights made so that you can open them. Have Pannell's heating apparatus. If you cannot have turf for the bottom of your vine border, over the drainage put long litter from the stable.

Asphalt Flooring (*L. S. C.*).—If we were about to floor a barn, we should use the gravel and gas-tar as recommended by a correspondent to-day. We believe it would have the additional merit that rats would not disturb it.

Winter Cow-food (*Liebig*).—Read some of the back monthly papers on "Allotment Farming." You cannot do better than grow swedes and mangold wurtzel. It is too late to expect *potatoes* free from disease that are planted now. Do not burn the turf, trench it in. You cannot live by farming land at £6 per acre. It is too much to pay even for a plot to keep a cow.

Botany (*H. J., Montgomeryshire*).—Probably Henfrey's Rudiments of Botany would suit you.

Roses (*E. T. Y.*).—Never mind the roses having shed their leaves last August. They do so very commonly. Cover over their roots with stable dung, just beneath the surface of the soil, and keep them well watered in summer. They will be all the better for liquid manure now and then.

Cochin-China Fowls (*K.*).—See what is said at page 360 of our last volume, about their combs becoming white.

Super-phosphate of Lime (*John Hayward*).—Bones are *not* converted into super-phosphate by mixing them with an equal quantity of wet ashes, and covering them with mud.

Greaves for Fowls.—H. W. says:—"In answer to the correspondent who wishes for information respecting greaves for feeding fowls, &c., they are to be had in 1s. sample cakes, with directions, at *No. 9, London House Yard, St. Paul's Church Yard.* But the greaves are sold cheaper at other places, and if sweet, do as well. The way to use them, is to break up with a chopper about a pound into small pieces, soak it with boiling water till soft, then mix with it some boiled potatoes or rice, pollard, or any other of the usual substances."

Bees (*Ibid*).—You can easily twist out the plugs. The bees will not rush out, as you fear. We should think they do not now require feeding. There are always many dead young bees thrown out at this season.

Iron Frames and Sashes (*C. T.*).—We know of no objection to these being used to pits, except the expense. They cool the interior

rather quicker than wooden frames, but this can be prevented at night by the coverings. Use Hartley's rough-plate glass. If the glass does not touch the iron, we do not think it would be cracked by frost, more than when in wooden frames.

Peat Charcoal.—This can be had of the London Manure Company, 40, Bridge-street, Blackfriars. It *cannot* be had of the Metropolitan Sewerage Company, unless soaked in Sewage.

Drummond's Churn.—The *Rev. J. S. L.* says:—"Will you tell your correspondent, *L. J. P.*, that Drummond's *Anti*-Metallic Churn, with six actions, two vertical, two horizontal, and two atmospheric, is said to beat every thing out of the market, where known. Its advantages and capabilities producing 5 lbs. of butter in three minutes, and hardly in any case exceeding seven or eight, are said to render it the very best churn ever invented in any country. I invite the opinion of your correspondents. It is patented at Perth, and a prospectus and description may be had by sending to 19, George-street, Westminster."

Ebbs' Lady's Garden Rakes.—*A Subscriber* wishes to know where these can be purchased.

Worms and Slugs (*G. A. G.*).—Worms are beneficial in a garden; they are gratuitous under-drainers. Both they and slugs can be driven away or destroyed by frequently applying lime. This has been explained repeatedly in our pages.

Our Calendar (*D. A. B.*).—It has more than once been explained that in this, *b* means "beginning of the month," *m* "the middle," and *e* "the end." The discrepancy you point out is easily rectified; *deciduous* shrubs were intended as not to be planted so late as April. The *rotation* we should prefer in your case would be carrots and parsnips (trenched for), wheat, potatoes, oats. We should manure with the bottom spit for the carrots, surface manure for the wheat and oats, but put no manure to the potatoes. There is no green crop equal to Lucerne for soiling your cows and pony. We certainly should not lay down the wheat with clover and rye-grass. It prevents the clean culture of the wheat, which, of course, is drilled, and interrupts the course.

Coal Ashes (*A. B.*).—These soaked in house-sewage are good for clayey soil. Put a little sulphate of ammonia into your hard spring water, and let it remain exposed to the sun for a few hours before applying it to your plants.

Old Orchard (*G. R.*).—We should pare off the old turf, char it, mix it with some decayed stable manure, and just point the mixture into the soil. You may thin out the over-thick and misplaced branches, but leave the general pruning until autumn.

Names of Plants (*Twig*).—The round-toothed leaved plant is what many cottagers call "The thread of Life plant." It is *Saxifraga sarmentosa*. The other little trailing plant is the *Linaria cymbalaria*, or the Ivy-leaved Toadflax, which grow so plentiful about the walls at Oxford, where they call it the *Oxford weed*. We never heard of the other two plants you speak of. (*J. T.*) Yours is *Illicium parviflorum*. (*Juvenis.*) 1. *Polypodium vulgare*. 2. *Geranium pratense* (?). 3. *Lathyrus pratensis*. 4. *Hypnum purum*. (*G. H.*) Your plant is *Salvia gesneræflora*. Of your *Cinerarias* No. 1 is the best, but none are superior.

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Advertisements.

WEEKLY CALENDAR.

M D	W D	APRIL 8—14, 1852.	Weather near London in 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
8	Th	Maunday Thursday.	29.988—29.889	50—36	N.E.	05	21 a. 5	43 a. 6	morn.	19	1 47	99
9	F	Good Friday.	29.911—29.760	49—28	N.	03	19	44	0 7	20	1 30	100
10	S		29.954—29.949	48—35	N.	02	17	46	1 15	21	1 14	101
11	Sun	Easter Sunday.	29.931—29.874	49—32	N.E.	04	14	48	2 11	☾	0 58	102
12	M	Easter Monday.	29.904—29.885	52—28	N.E.	—	12	49	2 55	23	0 42	103
13	Tu	Easter Tuesday.	29.957—29.939	51—30	S.E.	—	10	51	3 29	24	0 26	104
14	W	Stinging Fly seen.	29.931—29.882	48—38	E.	—	8	53	3 57	25	0 11	105

Meteorology of the Week.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 57.7° and 36.4° respectively. The greatest heat, 73°, occurred on the 9th in 1848; and the lowest cold, 22° on the 11th in 1843. During the period 88 days were fine, and on 87 rain fell.

It is rather a startling fact, that the originators of improved modes of cultivation have usually been unprosperous. Tusser, and Tull, and Hartlib, and Plattes, and Mortimer, and Arthur Young, with very many others, all contributed, by their writings and by their new practices, to advance our agriculture and gardening—yet they all damaged or ruined their property. Is it true, then, that only the foolish try experiments by which wise men may profit? We think widely otherwise; and William Ellis, of whom we have a few notes to produce to-day, will serve to illustrate what we consider the usual cause of failure with experimenters. Solomon has not advised us to get wisdom alone as the aid to success, but he has united wisdom to a help-mate from which it should never be separated. "My son," he says, "keep sound wisdom *and discretion;* then shalt thou walk in thy way safely, and thy foot shall not stumble." Now, if we examine the conduct of all the clever individuals whose names we have enumerated, we shall find that "discretion" formed no part of their mental excellence. Tusser vibrated between the court and the country, and had no firmness of purpose; Tull found hoeing beneficial, and thence rashly concluded it was the most essential portion of plant-culture; Hartlib was generous beyond his resources; Plattes was an alchemist as well as cultivator of the soil; Mortimer was more occupied by merchandise than manure heaps; and Arthur Young was a parliamentary reporter, and any thing but a practical farmer. It is this non-combination of "practice with science" that was the cause of all their failures; and this is proved not only by the dictates of common sense, but by the success which has attended the cultivation of the soil by those who had not only sufficient intelligence to suggest improvements, but sufficient practical knowledge to know whether those improvements, if successful, would be remunerative for the outlay in securing them.

Such practical knowledge was not possessed by William Ellis, at one time the proprietor of many broad acres in the parish of Little Gaddesden, in Hertfordshire. One who knows the parish well, says:—"The family of 'Ellis' possessed a good home and surrounding lands in the parish. I see, that in 1794, a certain 'Phillip Ellis' was buried here, and more than one or two of the female branches were married at the church. The family seems to have 'gone down in the world,' as they say, and their property to have frittered away by degrees. A few years ago, I remember an *Ellis* (a branch of the Gaddesden family) living at North Church."

William Ellis possessed a taste for writing books, to show others how to gather profit from their lands, and he allowed this to absorb that time and attention requisite for gathering that profit from his own. In his work, published in 1733, entitled *Chiltern and Vale Farming Explained*, he says:—"My residence is constantly among forest trees, and I employ workmen in their management in that part of the country most famed for such artificers. I occupy my own farm, and the glebe land of our parish, in all 24 enclosed fields of several sorts of soils; I have had a very favourable opportunity, almost 20 years together, in a country where farmers are allowed, in the general, to excel all others in this kingdom, and so great a difference there now is between the present and former practice of agriculture, as made an old sagacious farmer, who has acquired a good estate by his industry, and is now living, say—'I think I have been asleep these 40 years.' More grain, fruit, and cattle are obtained now off an acre, than formerly off two or three acres." Yet Ellis could not reap this treble harvest himself. He neglected his business for more agreeable employment:—"I yearly travel," he says, "hundreds of miles, on account of the several sorts of books I have (published), and intend to publish, whereby I have an opportunity of acquainting myself with the methods used in several different counties." (*The Timber Tree Improved*, 1738.) He told others of those methods, but he profited nothing by them. He continued to write, but his books did not prove remunerative. *New Experiments in Husbandry* did not live beyond the first number; and his *Complete Modern Husbandry*, though it passed through three editions, could not fill up the losses incurred by defective farming. The property was "frittered away," and the close of his mistaken career is told in this extract from the Parish Register of Burials: "—— 1758. Mr. Wm. Ellis. Author of several books of husbandry. June 16th."

On the 5th of July, 1851, Dr. Lindley, at the end of an editorial advocating the perpetuity of the Crystal Palace, wrote thus, in the *Gardeners' Chronicle*:—"If the comfort, the health, the enjoyment, the wealth of the metropolis would be thus largely increased by converting the Crystal Palace into such a park as could only be naturally found in Portugal or Madeira, then the last inquiry we should make would be, Who will recommend its removal?" These capitals are Dr. Lindley's own emphaticals, yet he himself now has signed a public document recommending that removal, and that the Crystal Palace shall be broken up and a portion of it re-erected in Kew Gardens! Now, we have no such inconsistency to explain away, for we have unwaveringly advocated a devotion of the Crystal Palace to the formation of a Winter Garden; so leaving to the public to decide which they think most probably is Dr. Lindley's genuine opinion, we take this first opportunity of assuring our readers that, notwithstanding the misrepresentation in that public document, Sir Joseph Paxton's conviction in favour of retaining the Crystal Palace in its present position, and devoting it to the formation of a Winter Garden, remains unchanged.

Most anxious are we that this purpose may be carried out, and we rejoice to see that public meetings are being held, and committees formed, to carry into effect this truly national design. If subscriptions are opened to realize this design we hope our readers will add their contributions.

Let it not be forgotten that such an opportunity can never recur, and that if advantage be taken of the opportunity, it will be the means of securing such a garden,

accessible in all seasons, as is possessed by no other nation on the world's surface. It would be, says Sir Joseph Paxton, "a park, decorated with the beauties of nature and art, under a sky-roof, having a climate warmed and ventilated for the purpose of health alone, furnishing, close to their own firesides, a promenade unequalled in the world, and, for the six winter months, a temperature analogous to that of Southern Italy. Beautiful creeping plants might be planted against the columns, and trained along the girders, so as to give shade in summer, while the effect they would produce by festooning in every diversity of form over the building, would give the whole a most enchanting and gorgeous finish."

In our last number (page 2) we left Mr. Alexander Anderson, in the February of 1778, at Philadelphia, serving as a volunteer, but anxious to return to New York for his books, papers, and collections. That return he effected in the course of the year, for in a letter dated March 18th, 1779, he mentions having sent packages of plants to Mr. Forsyth from New York, in the December of the previous year. His stay at New York, however, had not been long, for this letter is written from St. Pieres in the island of Martinico, and the cause of his being there is told in this paragraph:—

"I wrote you my determination of sailing to Surinam, but on my intended voyage thither was taken by an American privateer, and brought into this place about two months since, where I now remain a prisoner of war on parole."

What object induced Mr. Anderson to endeavour to reach Surinam does not appear, nor do we know exactly the time or mode of his release from captivity. This, however, was not of long duration, for on the 21st of March, 1780, he had reached the West Indian island, St. Lucia, and wrote thence the following letter:—

MR. A. ANDERSON TO MR. FORSYTH.

I received your kind letter, dated the 1st. of September (which deserves my warmest gratitude to you), but I have been unable, as yet, to comply with the contents of it, owing to my bad state of health I have laboured under since the beginning of July. I was very bad with an ague, and intermitting fever. I had almost lost the sight of my eyes with one fit of the ague, but I thank God am at present tolerably well.

The air of this island is mortal to most Europeans, and very few constitutions can possibly stand it.

I have got in no way of business as yet, and I am persuaded that I could not bear the confinement of any business in this island, and, I believe, hardly in any other part; for the researches and contemplations of nature are too attracting for me to be ever able to depress my ideas to any lucrative way for worldly interest, and I have often found that my attention has been drawn too much that way for my ease and quiet in a present life.

Had it not been for my bad state of health, I should have been able to have sent you many natural productions by this time, but at present I can only send you some seeds that I have by me, as in my present condition I am unable to traverse this inhospitable region to search for anything; for I believe my late sickness in a great measure arose from my exposing myself too much to a scorching sun. The heat here is oftentimes almost intolerable, especially in the woods, excluded from the circumambient air, and exposed to the perpendicular rays of a vertical sun. I hope in the course of a few weeks I shall be able to reassume my former exercise, and you may be assured my natural inclination will require no injunctions as a spur to my industry in collecting all natural productions (which I think worthy observation), whether vegetable, animal, or mineral.

This is, I think, no favourable season for sending plants in a state of vegetation from the torrid zone to Britain. I think the beginning of May soon enough for them to arrive in England. Write to me if you think you could preserve the *Epidendrums* (or any other parasitical plants) in your hothouses, as there is a great variety of them in this island, and many of them beautiful plants, worthy the attention of the curious. I think, to cut off part of the plant they grow upon would be the most eligible method of transporting them to you in a vegetating state.

Next opportunity I shall send some of the best kinds of *Pine-apples* to Anthony Chamiers, Esq., that I can procure; at present you must excuse me, on account of my indisposition.

I very much desire to return to North America, if it would please God that matters might be accommodated 'twixt it and Britain. It is there! where an unbounded field is open for the inspection of the curious; it is there! the beauties of nature may be contemplated with pleasure; it is there! nature amply pays the researchers of her repositories, without the fatigues and dangers one must undergo in such a climate as this. Indeed, nothing but a kind of enthusiasm could carry a man through the difficulties he must encounter in this part of the globe in search of natural productions; but, indeed, the tropics seem to be unfavourable to the advancement of science, or contemplation of any kind.

You are so good as to desire to know how I subsist, not being in business, or any way to acquire anything. I confess, if some gentlemen had not taken particular notice of me when I first came to the island, I should have been poorly situated, and perhaps gone into some way contrary to my inclination; but it pleases God, in all places where I have been, some one pays uncommon attention to me, which I have happily experienced here. For the collector of his Majesty's customs in this island (William Grant, Esq.) has in reality been rather a father to me than a friend. His house has been, and still is, my home; and in my sickness he tenderly cared for me, and nursed me with his own hands. He is a man of education and sense, and much given to natural philosophy.

Be as kind, in your next letter to me, as to let me know if the plants and seeds of the *Cinchona* ever came to hand which I sent about the end of July. There was two boxes with seedlings of the Cinchona, and some other plants, and also a bundle with seeds. They were directed to Mr. Aiton. One Mr. Stuart, a merchant, had the charge of them; he also took with him a quantity of the bark of the Cinchona. I ordered him to give some of it to you and Mr. Aiton, to get it tried, to know if it had the real virtue of the Peruvian bark, which I have reason to think it has (from the trials that have been made here of it); and I think it is the identical species that grows in Peru, that all the difference arises from wrong drawings, and descriptions acquired of the Peruvian. If it should have the same quality, it will be a valuable acquisition to the British nation. Be that as it will, I think it is worthy the trial.

On my first finding it, I brought specimens of the fructification, and some of the bark, to Dr. Young of St. Vincent's, who was at that time at the general hospital here. He told me he thought it equally efficacious to the Peruvian bark, if not superior to it. Said gentleman seemed very anxious about it, and as I took him to the place, and shewed him the trees I first discovered of it, he gathered a quantity of the bark, which he carefully dried.

It is something strange, that the idea of searching for this plant struck me at my first coming on the island. Had I not seen it with the capsule in perfection, I should hardly have detected it from the other parts of fructification, as described by Linnæus in his Genera Plantarum (I find his description of many of the West Indian plants very absurd). When I brought specimens of it to Dr. Young, he shewed me a drawing, which he said was of the Peruvian (that he got from Mr. Aiton), but it was not similar to this, and Dr. Young himself hesitated with me whether it was a species of it or not, until he saw a drawing of another species in Jacquin's History of West Indian Plants.

I found it, at first, only growing in one place, although

Dr. Young and I have often gone in the woods in search of it, since which time I have seen vast quantities of it in the interior parts of the island. It propagates itself plentifully from seeds, and is one of the most beautiful trees that ornament the West India woods. The trunk is generally very straight, and if it grows any distance from water, it seems to incline that way; it is twenty, and frequently thirty, feet high, and forms a beautiful head, very branching. The bark is brown, very succulent, by which means it is easily peeled off the tree; the oldest trees have the bark more frangible than the younger. When immediately taken from the tree, if chewed, is of a sweetish bitter, but a little after the mouth turns exceedingly bitter, and will continue so for half-a-day; it is, at the same time, a little corrosive to the throat. Each twig of the tree is terminated by an umbel of whitish-purple flowers, which, when past their perfection, turn blue.

They are succeeded with an oblong capsule, a little angulated towards the apex; when the seed is ripe it bursts open, and hangs on the tree in that gaping position for a long time, at least until the seeds are all dropped out of it. The seeds are small and winged. I never found it growing but on the margins of rivulets and water-courses towards the tops of the mountains. I have frequently seen it growing in the middle of a run of water. I have only an imperfect specimen of it by me at present, which I send you, with a description of the same.

It is very difficult to preserve specimens here; the best way is to get good drawings of them, but this is a work that requires too much expense, time, and trouble for me to attempt it in my present situation.

I have not as yet seen Lieutenant Miller, nor can I tell if I shall have the happiness to see him, as the fleet has not been here since the engagement with D'Estang. They generally rendezvous at Barbadoes, but I shall send the letter to him as soon as I can get a fit opportunity.

The plants that I sent to you in April last, which you never got, were—1, *Petrea volubilis*, 2, *Mimosa tergimmina*, 3, a beautiful shrub, which I take to be an undescribed species of the *Lycium*. They are all fine plants, and grow in plenty here, and I think they would flower very well in a hothouse, as they never grow tall. I shall send you young plants of them as soon as possible.

I am at a great loss for want of books, as I lost all I had when taken prisoner. I have only at present, of my own, an old edition of the Genera Plantarum, and Species Plantarum that I borrowed for a short time.

GOSSIP.

We see that *The Newcastle, Northumberland, and Durham Poultry Society* have fixed their show day on Easter Monday, April the 12th. A very competent judge observes, upon the prize list issued by this society—

"That one day is a time of too short continuance for the visitors to be well satisfied, and that if some of the poultry arrive as late as the morning of the same day, this will create some confusion. The society having grouped two hens to a cock is much better than three hens, as many first-rate stocks might find it difficult to find *many* hens at *one time* in exhibition condition and feather. The names of the judges are not specified: is this omission accidental or intentional? The different spangled Polands are not to be rewarded, which we think is a mistake. In the third law, 'All specimens must be *bona fide* the property of the exhibitor.' Would it not be better to name a period of possession, as has been done in the Birmingham prize lists, for this law would not prevent the exhibition of quite recent purchases. As a whole, the prize list is good and liberal."

Dr. Tschudi in his *Travels in Peru*, has the following particulars relative to its horticultural productions and practices:—

The damp soil is favourable to *potatoes*, of which vast quantities are planted. There is a degenerate kind of potato, very abundant in Chiloe. On bisection it exhibits a greater or lesser number of concentric rings, alternately white and violet, sometimes all of the latter colour. It is well known that southern Chile is the native land of the potato. In Chiloe, and also in the neighbouring islands, potatoes grow wild; but, both in size and flavour, they are far inferior to the cultivated kind. Like the maize, they shoot up in large leaves and stalks. The climate is also very favourable to the different kinds of the cabbage plant; but peas and beans do not thrive there. Potatoes are not planted on the coast, where, it appears, the climate and the soil are unfavourable to them. In those parts they are small and watery. On the higher ridges, which intersect the coast at short distances from the sea, the potato grows wild. I am inclined to believe that the root is indigenous in these parts, as well as in Chiloe and Chile, and that the ancient Peruvians did not obtain this root from the south, but that they removed it from their own high lands in order to cultivate it on a more favourable soil. The best potato grows about twenty-two leagues from Lima, in Huamantanga, which is about 7000 feet above the level of the sea, to the north-west of the Quebrada of Canta. This potato is small and round, with a thin white skin, and when bisected the colour is a clear bright yellow. It is called the *Papa amarilla*, and there is much demand for it in the markets, where it fetches a good price. The other potatoes come chiefly from the Quebrada of Huarochirin, and they are very well flavoured.

To a stranger nothing can appear more extraordinary than their mode of *ploughing*. As to a regular plough, I do not believe such a thing is known in Chiloe. If a field is to be tilled, it is done by two Indians, who are furnished with long poles, pointed at one end. The one thrusts his pole, pretty deeply, and in an oblique direction, into the earth, so that it forms an angle with the surface of the ground. The other Indian sticks his pole in at a little distance, and also obliquely, and he forces it beneath that of his fellow-labourer, so that the first pole lies as it were above the second. The first Indian then presses on his pole, and makes it work on the other, as a lever on its fulcrum, and the earth is thrown up by the point of the pole. Thus they gradually advance, until the whole field is furrowed by this laborious process.

The ladies of Lima recal pleasing recollections of the former glory of their *flower market*, and speak with regret of its present degenerate condition. The much vaunted *pucheros de flores* are still occasionally displayed for sale. They are composed of a union of fragrant fruits and flowers. Several small fruits are laid on a banana leaf, and above them are placed odoriferous flowers, tastefully arranged according to their colours; the whole is surmounted with a strawberry, and is profusely sprinkled with *agua rica*, or lavender water. These *pucheros* are very pleasing to the eye, on account of the tasteful arrangement of the flowers; but their powerful fragrance affects the nerves. They vary in price, according to the rarity of the fruits and flowers of which they are composed. Some cost as much as six or eight dollars. A *puchero de flores* is one of the most acceptable presents that can be offered to a Lima lady.

The cold climate and sterile soil of the Puna are formidable impediments to agriculture. Only one plant is cultivated in these regions with any degree of success. It is the *maca*, a tuberous root grown like the potato, and, like it, used as an article of food. In many of the Puna districts the maca constitutes the principal sustenance of the inhabitants. It has an agreeable, and somewhat sweetish flavour, and when boiled in milk it tastes like the chesnut. As far as I am aware, this plant has not been mentioned by any traveller, nor has its botanical character yet been precisely determined. Possibly it is a species of Tropæolum, but of this I am uncertain. The root is about the size of a large chesnut. Macas may be kept for more than a year, if, after being taken from the earth, they are left a few days to dry in the sun, and then exposed to the cold. By this means they become shrivelled and very hard. From these dried macas the Indians prepare a soup, or rather syrup, which diffuses a sweet sickly sort of odour, but which, when eaten with roasted maize, is not altogether unpalatable. The maca thrives best at the height of between 12,000 and 13,000 feet above the sea. In the lower districts it is not planted,

for the Indians declare it to be flavourless when grown there.

This last-named tuber would probably thrive in England, and deserves to be enquired for.

VINES UNDER GLASS.

(*Continued from vol.* vii. *p.* 352.)

In pursuance of this subject, opened as above, we may turn attention to *Greenhouse Vines;* and in order to meet the majority of cases and extreme difficulties, let us suppose that the cultivator has but one small house, and that beneath his vines he has a collection of in-door plants in pots. There are thousands of cases of this kind in Britain, and out of many scores which we have inspected in our day, we can scarcely count a dozen in which the joint culture of vines and plants was thoroughly successful. This points at once to the difficulty of the thing; and, indeed, amateurs perhaps seek more frequently advice on this head than any other.

Greenhouse vines are generally in full leaf by the middle of April, and from the period of the first stopping to the completion of thinning in the berry, the cultivator requires free access to his vines. Now we all know that the shelves of houses of this character are generally crammed almost to suffocation with the pot tribes; and not unfrequently do we see a few *pet plants*, as ericas, geraniums, petunias, fuchsias, roses, &c., &c., under a process of high staking and culture for the exhibition tables at the nearest great flower show. Here, then, is a medley mixture of objects; and here the collective virtue of the climates of the Cape, the Brazils, Chili, the south of Europe, and Syria, have to be combined in a mere band-box. Such being the position of affairs, the cultivator should lose no time, as soon as the middle of March is come, in weeding out all surplus pot plants, in order that justice may be done to the various processes of disbudding, stopping, thinning the berry, and training; for so sure as the pot-plants are crammed thickly, so certainly will abuse or neglect take place, both in the vines and the plants.

Now, since few persons thus situated desire to have all their pot-plants in bloom in the spring and early portion of the summer, a classification of the plants becomes necessary; most of those for an autumn display may be placed in some temporary shelter until the vine processes before alluded to have been carried out, when a fresh arrangement may again be made.

As to shelter, of course cold-pits or frames will be capital, but many do not possess such, or if they do, can scarcely spare them, so heavy a demand existing for those in the production of culinary matters. Those, therefore, who cannot command such things, might manage very well by obtaining some covering materials, at once transparent and waterproof, and suspending it on poles or rafters in some corner well protected from the north and east. Common garden mats would do for the sides, and we would sink the ground nearly half-a-yard below the ordinary level; taking at the same time proper precaution against lodgments of water. Such a place might, being firmly built, become a permanent portion of the gardening structures; for we have found such a thing useful the whole year. The selection of plants, and the operations requisite, we leave to our most experienced helpmates, Messrs. Appleby and Fish, who will teach us all something when they grapple with the subject.

A few remarks will now be offered as peculiarly attaching to the culture of *Greenhouse Vines.* In the first place, a more free circulation of air becomes necessary than in the *true vinery;* and this not only to prevent the pot-plants "drawing," but to disperse foul gases of all kinds, which are ever floating in the air where crowded collections of plants of heterogeneous character and habit are commingled together. We strongly suspect that the air of such small houses is more corrupted by far than the generality of cultivators are aware of; we have, before now, breathed an atmosphere in such places which strongly brought to mind the once famous, or rather infamous, black-hole of Calcutta. If there be any propriety in ventilating *night and day* in any garden structures, it is surely in these. There can be little doubt that the nakedness of stem, and inequality of the shoots, which we so frequently find in the *greenhouse* vinery, is attributable to the great temptation that exists in the months of March and April to indulge in unwarranted temperatures for the sake of obtaining early flowers. Those who are about to build houses for these double purposes, will do well to make a provision for *border heating*, as in that practice will be found a remedy for the imbecile and lanky condition too frequently observable.

Another point; atmospheric moisture. This, during much of the year, is very likely to exist in excess; for, it must be remembered, that every flower-pot is a kind of evaporating pan of slow but continuous action. And here our attention is attracted to the occasional application of fire-heat, whether in April or August, in the day, for other purposes than heat. It should be observed by the manager that 60°, without air, will draw the plants more than 70° with a liberal circulation, and this on account of accumulation of atmospheric moisture.

R. Errington.

(*To be continued.*)

ARRANGING FLOWER-GARDENS AND BOUQUETS.

There are some gardeners who enjoy the reputation of being thought masters in the places where they serve, and their employers are looked upon merely as so many bankers, who transact the money business of Cabbage & Co. And prime ministers get the credit of being as much the masters of Queens, Kings, and Emperors, as the said firm are of being those of easy gentlemen in the country. For very many years previous to the revolution of 1848, Prince Metternich is said to have been the chief ruling power in Austria, if not all over Germany, and one feature of that immense sway comes within the range of The Cottage Gardener. He was a great promoter of gardening and botany, and other branches of art and natural history. I have heard it said that the late Emperor of Austria devoted a certain sum of money, every year, to defray the expenses of a number of intelligent young men from his dominions, to travel and reside in other countries for a time, in search of useful information, and that he appointed them to various posts on their return home. A young gentleman, who came over to England thus so far provided for, is among my own personal acquaintances. To the profession of a gardener he added that of a gardening artist, could take plans of anything, and make portraits of trees, flowers, &c., and lay out and plant new gardens to any extent. Among other things he did while in this country, was to take plans, for his own private portfolio, of as many of the villa seats round London as he could find access to. I asked him one day what he intended to do with such and such plans of places, that appeared to me to be little better than a mass of confusion. "That is just the reason why I take so much pains to fix them in my memory," was his reply. "Your countrymen prefer studying in the best schools, and from the most approved designs and models, hence the reason why your young artists are less fertile at invention than those of some other countries," which he named. There is hardly a place, however badly arranged, without some point of excellence or

originality about it, which, although it may not be worthy of imitation, cannot fail to suggest some new idea, and a new idea always leads the mind to a set of rules and principles which are already worn so threadbare, that you cannot originate a new thought or idea from the perusal. He would have been delighted with part of my task which bothers me so much—looking over plans of so many flower-gardens—and I should be equally pleased if our correspondents would bear in mind the conditions I proposed when this question was first opened, namely, to send me only *a draft of an actual plan already planted, or proposed to be so planted another year, with the names of the plants written one way, on the shape of the beds*, so that I could read them off as I would a page of a book. Now, any gardener, who has been in the habit of planting flowers extensively, could see at one glance whether a given arrangement would be likely to suit or turn out according to expectation, or, at any rate, he could easily see a glaring fault. If I heard a man singing or playing *Jenny's Babie*, or *Polly put the kettle on*, or the *Highland Laddie*, or any other of those old Scotch songs which are, or rather were, familiar to my ear, I could tell in a moment if he made a false note, and that false note would grate upon my ear; and it is just so with the arrangements of flowers in a set of beds. But, supposing that I was asked to compose a new song, an Italian or a Spanish air for instance, is there a man alive who would believe that an old gardener could do such a thing; and yet I am asked to do things just as preposterous almost every week in the year, about planting flower-gardens on paper, a thing which no one connected with this work has ever thought of attempting. Now, if we could come to a right understanding about this subject, no one need hesitate about sending us plans of their proposed arrangements for the ensuing season; and to keep down the necessary expenses of such correspondence, I shall ask our worthy Editor to stop every letter at the office which does not comply with the simple rules just laid down, and a notice to that effect will appear among the usual answers to correspondents.

All the plans which I have hitherto received are filed, and a bundle of them are now being studied by a young landscape gardener who thinks them very useful, for he takes the same view of these things as my Austrian friend; so that besides the individual interest attached to these plans, they come in useful for suggesting new ideas both to myself and others, and I should willingly go on with them on a proper footing.

As a subject connected with this part of our undertaking, I shall mention a beautiful and very large *bouquet*, or nosegay, which I saw lately. It was destined for one of the very first drawing-rooms in London; it was made up chiefly of camellia flowers, principally white ones, but interspersed with red, pink, and rose-coloured flowers of the same plant, still the ground colour of the group was white, with a blush tint;—round the outside, a row of fern leaves, or fronds, hung down very gracefully; altogether this group was exceedingly well arranged, just as one would would wish to see a group of flower-beds, where they could be seen at a good distance off.

There are only three colours in flowers which will appear striking to a spectator at a few hundred yards distance from them—white, scarlet, and yellow; and when you come near to these colours in large masses, and find *shades* of them interspersd in smaller beds, the effect of the stronger colours is much weakened; unless, indeed, the plants and beds were so arranged that these shades run in *gradation*, which is one of the most difficult things to do well in any garden. I never saw the effect produced by the strong colours on weaker shades of them better exemplified than in the large nosegay, the ground of which was white, as I have just said. The camellia flowers being circular, they could not be made to touch each other all round: when you put three of them together there will be a small open space in the centre, and these open spaces occurred at regular distances all over the face of the nosegay, which was nearly flat, and quite circular. To fill up the open spaces, flowers of the *Neapolitan violet*, a grey, and of *Dendrobium nobile*, or some allied species, were used; the flowers of the Dendrobe being chiefly white, or lightish, with a blotch of fine purple coming in between two white and one pink camellia, both the white and purple were entirely drowned by the stronger colours; the grey of the violets in the same position was not only lost, but looked the very picture of starvation itself; and if you went back six yards from the nosegay, you could not discern either the violets or the Dendrobe at all. Flower-beds of these colours put together would look much worse under the eye, and they would not improve at a distance from it. If the flowers of a good *yellow* Dendrobe, those of *D. chrysanthum* for instance, and the old double *blue*, or tree violet, were used instead of the others, how different would have been the effect! It is true that the blue spots on a white ground would look black at a distance, still that would be a strong contrast, while the yellow spots would tell equally well at a distance under the eye.

Now, if plans of flower-gardens were sent as I always insisted on, the names of the plants would impress the colours as strongly on the mind's eye as those in the nosegay would on the critic's eyes, and every false spot would appear as vivid as if the actual living plants were arrayed before you, and what could be easier than to point out such blemishes on the instant. But, suppose all the colours and shades in a flower-garden were written on slips of paper, put into a hat, shook about, and then turned over on the table, the whole could not puzzle me more than some of the lists I have seen. But I think I have said enough to convince any one of the utter impossibility of getting harmony or contrast, or even a decent show, from such materials so arranged.

There are many ways of planting a flower-garden, and as many methods of arranging flowers in a large nosegay; but with the exception of wedding nosegays, which should always be made of the whitest flowers, the arrangement of the flowers may be reduced to three heads. *First*, to make choice of flowers all of one colour, or nearly so, and then using a small quantity of other flowers that will make a strong contrast with the ground colour. *Secondly*, shading the flowers from the centre to the sides; and *thirdly*, quartering the circle with four kinds of colours that harmonize well together, or with two colours in contrast, one quarter of the nosegay being of the same flowers as the quarter opposite to it, or, better still, the colours to be the same in each pair of quartering, but the flowers to be from two different kinds of plants. Thus, one quarter of some pea-flower of a given colour, and the quarter opposite to it, to be of pea-flowers also, but from a different plant. The *size* of the individual flowers to be as nearly alike as can be, then the other two quarters may be of composite flowers in the same way. This is the most difficult kind of nosegay to make well. When you have a choice and abundance of flowers, shading them is the easiest way, and when flowers are very scarce, the mixed nosegay is the safest to attempt, but it should never be without a ground colour, if artistic effect is at all attempted. To get a half-dozen of mixed flowers bundled up together anyhow, and go into good company with such a nosegay in these days, is looked upon as a certain mark of something I dare not write—certainly not a mark of high breeding; and the same mark and remarks now pass in criticising the composition of flower-gardens. D. Beaton.

WINDOW-GARDENING.

It is a trite, but true statement, that "great events spring from little causes." A splendid-looking machinery, employed in elevating and civilising our common nature, is seldom so successful as the more humble-looking agency that is too earnest to think of the merely superficially attractive. Simplicity and greatness can never be disunited. Love we do every mode directed to the bettering of our comrades of the masses, but we honour not the less, nay, we assert a high place as civilisers for those who have been quietly diffusing a taste for, gardening, plants, and flowers. The rigid moralist *attacks* existing social evils. The love of plants stealthily, but pleasantly, *undermines* them. Mind must be active: we cannot silence thinking. Would that the love of the beautiful in nature had a fair battle with the taste for the grovelling and degrading. In our village population, the well-cultivated garden is the best opponent to a crowded tap-room. The plant in the window exerts no less a civilising influence in our crowded cities. Would you be convinced of it? Look not so much into the lady's boudoir, nor into the balcony of the thriving tradesman—for there wealth may do anything—but follow the course homewards of the rough-looking orange basket-woman, from her long cold sitting at the corner of a street, her temper somewhat fretted by the hardness of her lot, and note how even that weather-beaten countenance is lightened up into joyousness and intellectualism as she attends to the wants of the single plant that graces the lattice of her lonely attic.

We know that many of the readers of this work are no strangers to the homes of the humblest classes of society, and we feel assured, that when they ask questions, even in reference to window-gardening, it is not for the purpose of keeping the knowledge conveyed to themselves. Apart from this, however, it is our pleasant duty to attend as much as possible to the requests of our readers, and therefore, though the matter has been largely discussed, we cannot refuse adverting to it again, and in the first place I shall refer to some of the *elements of success* in window-gardening.

1st. *Cleanliness.*—A man who has got the length of knowing much about plants cannot remain an ignorant man. Attendance to their wants will produce a love of study. Could we have got the length of having in every window fine, healthy, clean-looking plants, we might have been saved now the annoyance and expenses of sanitary commissions. It is scarcely probable, that the man who intelligently cares for the health of his pot-plant would be quite careless of his own. The state of the plants in a window is, therefore, so far, a test of the intelligence and industry of the household. We have no wish for a prevention-of-cruelty-to plant bill, at least for the executing of it, but we would stop the cruelty if we could, because, just as in every other case of cruelty, its infliction is greatly injurious to the perpetrator. I would sooner see no plants in windows, than see them with stems and leaves encrusted with filth and dust. Through every part of a plant that is fresh enough to be young and green, there is a continuous process of respiration and perspiration going on. We have no occasion to say *now* how these processes change in light and darkness. With the light and darkness afforded in our windows these changes will go on all right, provided the leaves and stems are clean. To expect plants to be healthy, and yet covered with dust, is just synonymous with expecting full health in the human system with the skin covered with paint, and the mouth and nostrils for the most part shut up with sticking-plaster. Removing the plants from the room when receiving its "*ridding up*," or securely covering them with a cloth during the operations of dusting and sweeping, and frequent sponging and washing of the foliage, are indispensable to luxuriant health. The other day I noticed fine plants in windows that *must* have been done that way. Thus treated, the luxury of flowers may be obtained in the most thickly clustered districts of the metropolis.

2nd. *Freedom from Insects.*—The aphis, or green-fly, is the most frequent intruder; their appearance is always a test of slovenliness. Where cleanliness is the order of the day, they will have as little opportunity of rearing their colonies as a spider has of fixing a huge fly-trap in a corner. We have often been vexed to see good-meaning people as much at their wit's end as if they were appealing to Hercules for help to rid them of myriads of these green-coated fraternity, when five minutes with their fingers, and a water-pail, would have cleared away every vestige of them. If that should be a too delicate matter for fingers to be engaged in, then a whiff from tobacco smoke, and a syringing afterwards will be equally effective. By removing the plants to any convenient spot, and covering them with a cloth, this may be easily done. Those who will smoke, might then associate their puffing with some utility. Let the insects be removed, or destroyed, as soon as they show themselves. When they have had time to do their work, you had better save yourself all further trouble, by consigning them and plant together to one resting place.

3rd. *Potting and Compost.*—These matters have been much dwelt upon. Let us just now reiterate the necessity of having the pots *always* clean, the importance of abundant drainage, and the advantage of the compost being rough, porous, and *poor*. Anything in the way of manure should be supplied, as the blooming approaches, with surface dressings and manure waterings. Anything like rank luxuriance in foliage is to be avoided in window-culture. Soil, obtained from a roadside, passing through a loamy district, and thus the loam becoming commingled with ground flints, will grow nineteen out of every twenty of the plants best suited for pot-culture in windows. The necessity of attention to drainage, and the porousness of the soil, will be evident when we consider

4th. *Watering.*—This is a most perplexing subject to all new beginners. Go where you will, unless among the experienced, and the question with respect to this and that, and every plant, will be, how often should I water it? Say that plants in pots are regular teetotalers, that they like drink *only* when they are thirsty, and a stare of incredulous what-do-you-mean, will be your reply; and yet this is the very best answer that could be given. This is one reason why we lay such stress on the soil being porous and open. New beginners must do something, and the water-pail becomes at once their favourite implement. The letting be too dry at one time, the little drop now, and the little drop then, are the rocks on which high hopes are wrecked. Even when this propensity is indulged, the danger will be the less if the soil is porous. There is less danger of the water being confined to a stratum on the surface, as it would have every chance to be if the soil was close and fine. In watering window-plants in general, water only when the plant needs it. Do it then thoroughly, so as to reach every fibre, and then wait patiently until your services are required to repeat the operation. This repeating will depend upon season, weather, and the amount of moisture thrown off by perspiration. In a state of rest in winter, water may not be wanted in a month; in dull weather in summer, when growing, several days may at times elapse; in hot sunshiny weather, you may require to water at the least twice a day. Damping the leaves morning and night is a grand thing on these latter occasions. Saucers for the plants are generally used; as a general principle, never allow the water to stand in them after watering above the one-eighth, or the one-sixteenth of an inch. If unfortunately your plant has got so dry that the soil contracts and

shrivels from the side of the pot, trust to no watering, but set the plant with its pot for five minutes in a pail of water, and then allow it to drain before replacing it in the saucer; a large plant, in such circumstances, would be better of several hours. Lastly, just now, unless during the four hottest months of the season, let the water be as warm, or warmer, than the temperature of the room.

5th. *Ventilation.*—The breeze, so grateful to the invalid, is also grateful to plants; hence they will rejoice in the window being opened in spring and autumn, and being set outside in summer. In winter, unless in extreme cases, they will obtain a sufficiency of change of air by the opening of doors, and the draught in the chimney. This will be especially the case if

6th. *The position of the plants is duly attended to.*—When plants are growing they cannot have too much light in winter. If placed close to the window, they will suffer little there for the want of air during the day, the light will counteract the drawing effects of the heat of the sitting-room. Night is the period of danger. First, during the evening, when the temperature is high, and from the doors being long shut, the air is so impure; at that period the plants should have the coolest and airiest position. Secondly, during the night, when the excitement of the high temperature of a sitting-room makes them more liable to feel the effects of frosts. In severe weather, if set upon a table in the centre of the room, they will always, or mostly so, be safe. For ease of moving, instead of having plants on the window-sill, we would recommend a table, or stage, easily moved. Not only would this be an advantage in winter, but in summer the plants could be moved to the window morning and evening, and then, by moving them back during the day, the bloom would be preserved, and no necessity exist for shading. Between this, and the dawdling system of placing plants on the floor, there can be no comparison.

7th. and lastly just now. *Temperature and Atmospheric Moisture.*—Plants that will not stand frost, are in general best suited for window-plants, as hardy plants are apt to become weak. The hardier these border plants are kept, however, the better they will do. The dry atmosphere produced from fires in living rooms is one of the greatest evils that plants in windows have to contend with, especially during cold weather. The best mode of neutralising this, is just what promotes health and cleanliness — namely, frequent damping of the foliage This will farther be promoted by covering the surface of the pots with damp moss, and better still, by plunging the pots altogether in such a medium.

R. Fish.

CULTURE OF THE ROSE FOR EXHIBITION.

(*Continued from page* 8.)

Treatment after the Buds begin to Grow.—The buds having fairly taken, the shoots of the stocks should be shortened-in considerably; and the ties slackened to allow the branches in which they have been inserted to swell, without being compressed. If allowed to remain tight too long they are apt to break off close to the bud, and then there is great danger the buds so situate will either perish, or be blown off when strong winds prevail. Till the buds have grown to a considerable strength there ought to be a portion of stock left above them. Four or five inches will be sufficient, and will be found useful for a time to secure the young shoot of the bud to, if the stock happens to grow upwards. When the shoot from the inserted bud has fairly taken possession of the stock, these pieces of the stock beyond it should be cut clean off. This should be done the second year at the furthest; but if the stock is small it may be done earlier, especially where the Manetti stock is used.

Propagation by Cuttings.—Though Roses are generally propagated by buds, yet they may be easily propagated by cuttings, but more especially the *Bourbon*, *China*, and *Tea-scented* varieties. For growing in pots this is perhaps the best method; at least, it is useful, and, therefore, we will briefly describe the way it is done. The best cuttings are made from the young shoots of the same year's growth half-ripened; consequently the time to put them in depends upon when that takes place. It is a good plan to place such as are wished to be increased in a gentle heat early in spring, and by that means they are ripened earlier, and the cuttings are sooner ready to be made, and, therefore, will root, and make good plants before the winter sets in. When the cuttings are in a fit state prepare the pots to receive them: the most convenient size are what are called about London 48's.: these are about four-and-a-half inches across; they should be quite clean. Drain them well and fill them, to within an inch of the top, with a compost of sandy loam, peat, and leaf-mould, in equal parts; then fill the remaining inch with either pure silver sand or clean-washed river sand; give a gentle watering to settle it firm, and then proceed to make the cuttings. Cut off a few at once only, and into lengths, with two buds to each. Reject the very young tender tops. Dress them by cutting off the bottom leaf, leaving the upper one entire. With a small, smooth, rather blunt stick, make a hole in the sand, close to the side of the pot, and put the cutting into it with the leaf pointing inwards, pressing the sand firmly to it. Proceed thus till the pot is filled, then give a second gentle watering, and it will cause the sand to run into and fill up the holes. When as many pots are filled as are wanted, allow them to stand on the bench for an hour to dry the leaves; then place them in a gentle hotbed, or under a handglass in a propagating house. Shade them from the light and sun for a week or two, and keep them close for that time; they will soon form calluses, or swellings, round the base of each, and when that is so, the cuttings will do with much less shading, and the light will assist them greatly to push forth roots. As soon as these are formed, pot them off directly singly into three-inch pots; replace them in the frame or under handlights for a short time, till they make fresh growth; then gradually accustom them to the full light and air, and when the pots are middling full of roots repot them, and then they are established plants.

Cuttings of the commoner *China*, and other similar roses, may be struck easily if cut into lengths and laid in in rows across a narrow border, leaving only the top buds above the surface, on the north side of a low hedge or wall. The time to put them in is in early spring, and they will shoot and make tolerable good plants before the end of autumn; then take them up, pot and place them in a cold frame till spring, when they may be planted out in the garden, or be repotted to flower in pots.

Section 5.—Winter Management.—This naturally divides itself into two heads:—First, treatment of those planted out; and, secondly, treatment of those in pots. In the autumn, when the leaves are fallen, entirely clean them away, and cover the surface of the ground with short rotten manure; with a three-pronged fork work it in amongst the soil, leaving the latter as rough as possible. See to the stakes belonging to the standards; if they are decayed at the bottom, renew them, or the winds of winter will blow them about and injure them much. If a tank of liquid-manure is handy, a good dose or two of the contents will be useful. Protection should be given to the more tender *Bourbon*, *China*, and *Tea-scented* varieties. Perhaps the best is some fronds of common fern tied slightly in amongst

branches. Those in pots should be protected also from severe frost: the pots should be plunged nearly close together in a bed, and a covering of coal ashes laid all over them so deep as to quite cover the rims of the pots; this will prevent the pots from breaking with the frost, as well as protecting the roots. The branches of the more tender kinds may be well sheltered from the sharp breezes by sticking in amongst the pots a quantity of short fir branches. Small plants in pots would be best sheltered in a cold frame or pit, giving plenty of air on all favourable days. T. Appleby.

FLORISTS' FLOWERS.

Cineraria (*J. Crossling*).—Your seedling, a cross between *Lady Gertrude* and *Carlotta Grisi*, is an excellent flower; form good, though the notch of the petals is not quite gone; petals broadly tipped with bright blue, and *disk* of the same colour. Of course we cannot speak of the habit of the plant from part of a truss.

Cactus (*J. Willison*).—Your seedling bloom is very good. Entirely deep crimson, without any of the purple tint that marks the inner base of the petals of some of the species. It is very compact in form, and altogether is a desirable variety.

Cinerarias (*D. P.*).—Nos. 14 and 15 best, from novelty of the markings; but all have petals too deeply notched to be ranked even as second-rate flowers. 14 is the best.

PROPAGATION OF EXOTIC ORCHIDS.

(*Continued from page* 399, *vol.* vii.)

Govenia.—A genus of stately orchids worthy of being increased. The species are plants with round pseudo-bulbs, very similar to those of *Bletia*. The old bulbs have dormant buds near their base; these will not push so long as they are united together, excepting the last formed one; hence it is necessary, either in order to form a new plant, or to have more shoots than one in the same pot, to divide them. Pass a knife-blade through the connecting rhizoma without injuring the roots, and allow them to remain in the pot till the first new bulbs are formed; then, at the time of potting, separate them, and make as many plants as there are new bulbs, if that number is required; or only take off one, and pot the next together, to form a large fine specimen.

Grammatophyllum.—This is also a noble genus of plants. They are increased in the usual way, by taking off a back pseudo-bulb or two at the time of potting, repotting them in small pots, and giving no water till the incipient buds have grown an inch or two; then water very moderately, giving more as the shoots and roots advance in growth, and afterwards treating them like established plants.

Grobya.—Increased in the same way as *Govenia*.

Houlletia.—A small genus of very handsome fragrant-blossomed plants. Increased readily in the same way as the preceding genus.

Huntleya.—The plants of this genus have very obscure pseudo-bulbs; they should be increased by division, but the plants should previously have produced side-shoots. Take one of these off, pot it, and place it under a handlight for a time, until it begins to grow; then prop up the side of the handlight till it is fairly established; then take off the covering every night, replacing it during the day for a few weeks, when it may be fully exposed and treated like the rest.

Lacæna.—There is only one species of this genus at present known. It has large pseudo-bulbs. Take off two of the oldest, and treat them like *Grammatophyllum*.

Lælia.—A fine genus, very desirable to increase. Take off two or three back bulbs and place them upon small blocks *without moss;* hang them up in a shady place against a moss-covered wall. Syringe them two or three times a-week. The dormant buds will soon break, grow, and produce new roots; then increase the use of the syringe, and keep up a moist atmosphere in the house during the time of growth. When that is perfected, use the syringe only just sufficient to prevent shrinking. In the spring, when they begin to grow again, give them new and larger blocks, and treat them like the older plants.

Leptotes.—A genus of plants of neat habit, freely flowering; increasing by breaking up a large plant into two or three divisions, making a plant of each, and treating them in the same manner as if they had never been divided.

Lissochilus.—Increased in the way as *Govenia*.

Luisia alpina.—This plant, the only one of the genus, has a great resemblance to an *Aerides*. To increase it allow it to grow and produce roots above the material in which it grows; then divide the stem in two, pot the top in sphagnum, and the bottom will soon produce a fresh shoot, and thus two plants will be made.

Lycaste.—There are some splendid species in this newly-formed genus. Cut off one perfect pseudo-bulb, with a living dormant bud at its base; pot it, give little water till fresh roots are formed, then treat it like the established plant, but be careful no water lodges in the hollow of the young leaves.

Masdevallia.—A genus of herbaceous orchids readily increased by division.

Maxillaria.—A large genus of plants mostly uninteresting. Increased in the same way as *Lycaste*.

Miltonia.—As fine a collection of plants under one name as any in the whole order, and, consequently, the more worthy of propagation. The dormant bulbs live for several years in a state of somnolency. They may be easily enticed into a state of activity of growth by dividing the rhizoma. Even a single pseudo-bulb will soon make a plant, therefore, all the cultivator has to do is, take off a sound bulb, pot it in the usual compost, place it in the same heat as the old plants, giving but small waterings till new shoots and roots are produced, and then the same treatment as is given to the older plants.

Mormodes.—Increased in the same manner as *Catesetum*.

Neottia.—A genus of herbaceous orchids producing generally two shoots from the base of the old plant. Divide them into two plants without injuring the roots; pot the divisions, and treat them as if they never had been divided.

Odontoglossum.—Like *Miltonia*, this is a family of very handsome flowering plants, but has in it some species very different in character to the rest. The larger growing, such as *O. Bictonense*, *O. citrosmum*, *O. grande*, and *O. pulchellum*, may be increased in the same manner as *Miltonia*. The smaller growing species, viz., *O. cordatum*, *O. læve*, *O. hastilabium*, *O. membranaceum*, and *O. Rossii*, require a more careful manipulation to increase them. The most safe way is to cut off very carefully without injuring either the growing established plants or the parts divided from them, preserving every living root, and fixing them upon blocks with a little moss placed about half-an-inch from the bulbs. This causes a moisture to spread itself over the block, and in the air near to the plants, just sufficient to keep them fresh and alive till they begin to grow; it requires, however, to be occasionally wetted with the syringe. When new roots and shoots begin to appear, then syringe more freely.

T. Appleby.

(*To be continued.*)

ON THE VARIATION OF THE SEASONS AS EXEMPLIFIED IN ASPARAGUS.

Notwithstanding that some of the traditions handed down to us by our forefathers are said to be erroneous, yet there are others which will bear the strictest investigation of the improved practice of the present day; and on reviewing the period in which the supposed fallacies had their origin, might we not, in common charity, ask ourselves if we are not daily in the habit of adopting wrong ideas in a similar way? How often do we hear the remark made, "What an extraordinary cold day; how very late the season is, certainly a month behind last year!" Or it may be on seeing a solitary primrose in January, "What a remarkable early one!" Now, though great allowance must be made for the unthinking manner in which such thoughts are uttered, yet suppose they were noted down in the page of history, how foolish it would appear, especially as they might be accompanied by a set of ideas from another person, diametrically opposite in the conclusions come to. Now, though we know that many equally successful results follow from adopting opposite courses, as two navigators may both start together for the antipodes, and it is possible might arrive there both at the same time, although one sailed west and the other east, yet the experience of those who went before them had demonstrated the one way to be much better than the other; so likewise in the culture of many things belonging to the vegetable kingdom. But, confining our observations to things more especially bearing on the variations of the seasons, let us see if we cannot discover a more correct test for its earliness or lateness than the precarious blooming of the primrose noted above, whose cheering appearance may perhaps be more due to the greater amount of sunshine of the last few hours than to that permanent advance of the season by which we ought to establish our criterion. In following out this idea, our first impression would be to find out something more stable in its growth, or, in other words, "less the creature of circumstances" than the universal favourite above; and the swelling or bursting of the buds of trees has often been pointed to; but the process is so very slow in many species that no fixed period could well be determined on as "a fixed point," as the memory could hardly be expected to bear this fictitious point from one year to another, and it would be no easy matter to explain it on paper, we are, therefore, driven to find out a more simple test, and one of the very best exists in the article which forms the subject of the present paper, and it is one to which we have for many years regarded as "our thermometer" of the season, and, strange to say, we have only to record a variation of about six days between the earliest season and the latest one, while very often one or two is the usual difference.

Our mode is this: the asparagus beds are done up in March, the soil on them made fine, and not too much of it; early in April we begin to look daily for the heads making their appearance, and the first one we see an inch above the level of the soil, we note it down, and in a series of seasons our notes range from the 10th to the 16th April, as the periods we have first discovered this vegetable presenting itself. Although there are many situations earlier, and some later, yet the rule holds good in both, and we question if the variation is greater in either. Now we know of nothing else that forms such an undeviating register of the state of vegetation, and we advise our readers, in their various localities, to examine for themselves; and as this number of The Cottage Gardener will issue from the press just in time for them to witness the advance of this valuable production, we strongly urge them to note it down in their pocket-book, and see how much difference another year makes.

We know of only one more test that can be compared to it, and perhaps it may exceed it, being, as it is, a production of more general importance, namely, wheat; and however severe the winter may have been, stripping it almost of every blade, yet, when the time comes for it to shoot out into ear, it is always at its post. Now, I have not been able to notice this so much in the same neighbourhood, but, from what I have seen, I should say three or four days to be the maximum difference in its arrival to this state. Now this sounds odd, when we hear of some harvests being a month or more late than others; yet it is literally true; but, as we have no right to trespass in our neighbours wheat-field, let us retrace our steps, and see what our asparagus demands of us in the shape of prepayment for the generous supplies it will soon begin to yield us, as well as to continue its utility as an index of the passing season.

In saying a few words on the culture of this useful vegetable, we must not forget to remind our readers that, although we have placed it as a sort of criterion of the season, yet that mighty personage "the British public," is anything but unanimous as to what the criterion of good asparagus is! Many of the writers on horticulture of the last few years, have condemned, with more freedom than courtesy, both the asparagus and its growers; yet we still see the great bulk of the asparagus exhibited for sale presents the same features it did years ago. Fickle and unaccountable as is the public taste, still there are some things to which honest John Bull clings with parental fondness, and if some of these notions be wrong, our duty is to assist in convincing him of it, and most certainly his predilictions for tough white asparagus, in place of tender grown, is erroneous in the extreme. It is no use to say its appearance is a something in its favour, because, when prepared for table, it certainly does not look so well as the green, and it is only when seen through the plate-glass of a green grocer's window that it looks so tempting; and we have seen some sent to table not much better to eat and digest than if it had been a number of bamboo walking-sticks cut into lengths, boiled and served up; but, as this vegetable requires to be properly grown, as well as judiciously cooked, some hints that way come more directly under our department.

We believe the best asparagus districts in the kingdom to be those fine diluvial soils found on the margins of rivers, and on none is it more cultivated with success than on the banks of the Thames; but, as every garden, where it is wanted, does not contain such a soil, some means must be taken to improve what they have, bearing in mind that the nearer they can imitate the soil alluded to, the more likely are they to be rewarded with success. Deep trenching, and removing inferior earth, to be replaced with better, will do a good deal, and liberal allowances of manure and other enriching matters will assist much; yet, with all these auxiliaries, the amateur need not be disappointed if he still be unable to cope with the occupants of the middle row of Covent Garden, as we know of nothing which attracts the attention of our provincial gardeners so much as the quality of the asparagus there exhibited—we mean its size, and it would be easy to give it another colour. Now few gardens present a soil so nicely balanced to the wants of this plant as the one in question, and our mixtures rarely contain all the elements provided in such a locality; yet much may be done when a determination exists of having it good. One thing, be sure not to forget to drain it well, if it requires it; not but that the moist humid atmosphere, and soil, too, by river sides are congenial to it, but the latter is more porous than is usually found in upland districts. When, therefore, it is determined to make asparagus beds on stiff heavy ground, a great accession of foreign matter must be had recourse to, and the beds, when made, ought to be elevated above the general ground.

The above notes relate to making new plantations; but much may be done in renovating old ones, and the best time for that is summer, and copious drenching with liquid manure will be found of great service. Salt may also be applied at various times, although we never could exactly see that much good arose from it; but others have reported favourably. Another thing in the treatment must not be lost sight of—do not cut the shoots too severely; cease in time, and we have always thought the plan of cutting away everything up to a certain day, when cutting ceased altogether, was open to many objections, but still more so is the barbarous plan of mutilating the roots in winter in the process of digging the alley, or other space between the rows. But more of this anon. J. Robson.

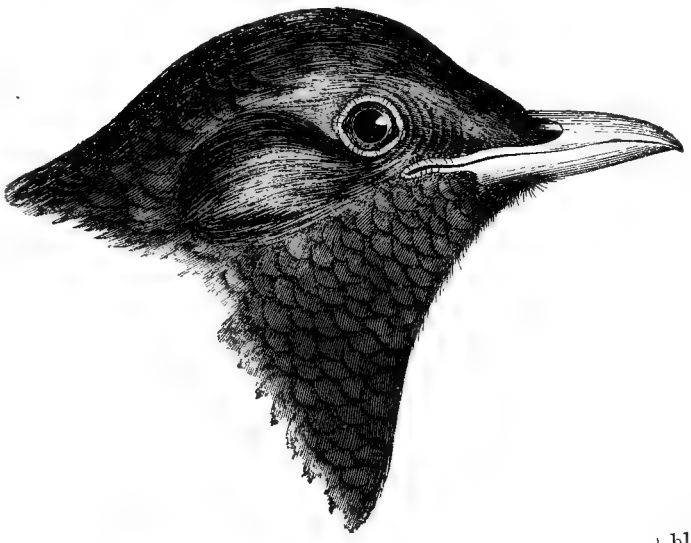
BRITISH SONG BIRDS.

(Our readers will be pleased to find from the following that Mr. Rayner has resumed his excellent practical remarks upon this interesting department of household agreeables.)

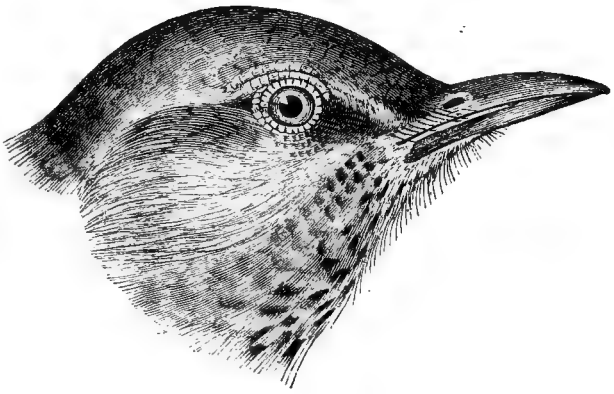
BLACKBIRD.

Insessores Dentirostres. Merulidæ.

Turdus Merula; Merula Vulgaris. Ouzel; Garden Ouzel; Merle.



COCK BLACKBIRD.



YOUNG HEN.

This bird is so generally and well known as scarcely to require description. Its glossy black plumage, and yellow gamboge bill, together with the yellow fringe around the eye, render it conspicuous, and readily distinguished; the tints of the female, however, are less bright, and rather resemble a dusky or amber brown. The solitary habit, brisk and restless flight, and vociferous chattering of alarm, if disturbed, proclaim at once the blackbird. Its food, in the natural or wild state, varies with the season; in the spring and early part of the summer it mostly consists of worms, snails, and the larvæ of insects, the snail particularly, which he dexterously kills by breaking the shell in pieces against a stone or stump of tree, by which means he readily arrives at the soft parts within; when the season is more advanced, then fruit is often preferred, the currant-bush especially, on which his dainty dinner invitingly hangs, and much to the annoyance of the gardener, who threatens him with vengeance should he perchance to flit across his path. It is a matter of much doubt whether the blackbird is not entitled to a fair share of the summer fruits for his effective vigilance, and destruction of those pests of the gardener, the slugs, and snails, and other insect larvæ, on which for the most part of the year he feeds; for myself, I should not grudge him his share of the luscious fruit of which he has been the watchful keeper so long before, more especially, too, when he delights one of an evening, and, in fact, all day long, with his enchanting song.

I have kept these birds for many years, but I always have them and rear them from the nest, as they *then* become tame, and do not hesitate to breed in confinement. We are told *their* song is not so good as those taken wild; that is not the result of my experience, and I think my ear is sufficiently good to detect any difference. I am well aware that if the bird be kept entirely with another of a different character it will, from its imitative power, very readily catch the song of the other, or the *tune* of a song if taught; but those I have had have been placed among other birds of almost every British variety, and I have hitherto found each kind has attained only its own peculiar song. The food I have usually given has been boiled bread and milk, made into a stiff paste, and crushed hemp-seed, well mixed together, and fresh daily; occasionally a bit of meat, raw or cooked as the case might be, a snail or worm, or other insect, by way of treat, and in the summer a little fruit. I think a change in diet conducive to health, but they will thrive very well upon the boiled bread and milk and hemp-seed.

I have already said they will breed in confinement. This has been frequently the case with me, both with blackbirds and thrushes, as well as others. I had a very large aviary, in which were planted fir-trees, and a fountain of water constantly playing; the birds were supplied with the materials for nidification, which they readily appropriated, and I have been highly amused with their little ways, and admirable sagacity, while watching the building of their nests. Having adverted to the breeding of blackbirds, I will narrate a circumstance which the blackbird calls to my mind, and which occurred to me some time ago. A pair of blackbirds having settled the whereabouts of their nest, it was in due course erected. One morning, on my return home after visiting my patients, I found the hen blackbird on the ground, with feathers rumpled, head distorted, the membrana nicticans nearly covering the eye, and, in fact, the bird having the appearance of being in the agonies of death, fluttering on the ground; I picked her up, and on close examination discovered that the bird was suffering from inability to deposit her egg, or in other words, was in that condition commonly known to bird-fanciers, as being *egg bound.* Having carefully placed her on her back in my left hand, I gently grasped the abdomen with the fingers of my right hand, and turned the position of the egg in the oviduct; by gradually pressing upon the egg, or rather behind, I pushed the egg forward, and in a minute the bird was released. I placed the egg in her nest, and the bird upon it. In the course of an hour, or less, the bird was quite well, and flying about the aviary. On the four succeeding days, the like circumstance happened, and on each occasion I was compelled to assist the bird in like manner; the five eggs were left in the nest, which she eventually hatched.

I have mentioned this circumstance in order to prevent the usual method adopted by bird-fanciers, that of crushing the egg while in the oviduct, a proceeding which too often ends in the death of the bird. That which I adopted is much better, and is attended with far less pain, while the result is far more satisfactory. W. Rayner.

EGGS.

I thought I had quite done with eggs, as far as pen and ink are concerned—the reader may be pleased and amused to find, by what follows, that such is not the case. A new year has produced a new deposit; and now that the fresh laying has begun, it is impossible to state to what extent it may be continued.—D.

"There appears to me much that is excellent in your observations on eggs. That, for instance, of limiting the number to hens sitting is most sagacious. I really hope to profit by it, and, by proportioning the number of eggs to the size of the hen, and the season of her incubation, to rear more and healthier birds than formerly I have done. Who knows but somewhat of the tendency of my Dorkings to that remarkable atrophy, with no observable diminution of voracity, which you so ably describe when writing of them, may be in some measure provided against and arrested? One procedure I usually adopt, especially in cold weather, to which, if I remember rightly, you do not advert—that is, giving the eggs to the hen somewhat tempered with warmth. I have the eggs laid upon a flannel in a small handy basket, and placed for a short time just near enough to the kitchen fire to raise them to the warmth of that atmosphere. The other end of the flannel is then thrown over them, and they are carried and put under the hen, who is instinctively grateful for the care and tenderness with which you exercise your munificence—restoring her own as warm as she left them.

"This caution is not thrown away. I was speaking, only a day or two ago, to a farmer's daughter about this matter. She had sent to me for a set of duck's eggs I had offered her whenever she might have a hen wanting to sit: I dared not appear stingy, and send her half-a-dozen—I sent twice that number, adding a little advice. On my inquiring how the hen sat, her answer was—'Oh! sir, she wouldn't take to the eggs at all.' Thus the hen was instinctively more up to her work, and the probabilities of unprofitable confinement, than her rational owner. Besides, it makes one shudder at the idea of a poor hen parting with her vital heat to a dozen cold duck's eggs in the middle of February! I begged this young person to use her eggs, and send to me for more. This she would not hear of, but insisted she could keep them a very long time beautifully (!) in bran. She had kept some turkey's eggs last year a very long time before she gave them to the turkey to sit upon. She was fain to acknowledge that she had very bad luck, 'very bad luck indeed, with them!' It was waste of man's noblest faculty to endeavour to convince her that her 'bad luck' was her own bad management, in keeping her eggs *so beautifully* such a *very long time.*

"The Romans assigned a very significant term to express the shell of an egg. They called it *putamen.* Not only its pureness, its smoothness, its faultlessness, but also its *suggestiveness,* is acknowledged and conveyed under this expression. It means that an egg is full of thought, or material subject for thought, as well as full of meat. And I confess to you that 'I am one of those' who indulge many very curious notions, sympathies, and susceptibilities, and own to much respect and wonder concerning these mysterious embryos. I cannot behold the care, the affection, the joy and pride of the instinct that has deposited and now gathers them under her, cherishes them, broods over them long days and nights, speaks to them as if they were already sentient existences, without a feeling of inferiority. I would give worlds to learn from this mother all the secrets of her instinctive knowledge of these fondly-welcomed entities. Dare any man assert that more, that *influence* may not supervene? As regards sex: bees can take a worker, and make of *him,* or *it,* a queen. For colour: the mysterious florist runs through the bulb wherein resides the coming year's perfect florescence, the strands of divers colours, which impart to the future blossom the hue, or hues, he willeth (?). Bear in mind that breaches have been made and repaired in the wall of the embryo's dwellings; and admit, as you must admit, that potent charms and pigments might have been, and might be, infused (? ?). *Be not incredulous: neither believe too well, nor too much.*

"With all these ruminations and regards—these deep convictions of the respectability of eggs, you cannot but suppose me somewhat qualmish as to the desirableness, and even the propriety of eating them. It is not that I attach undue weight to the fact that one anticipates a dinner for two in thus supplying less than half a breakfast for one, and this greatly to the prejudice of an esurient public; neither is it that I am a disciple of Pythagoras, or Empedocles, and subscribe to the doctrine of Metempsychosis. I had rather not believe in the transmigration of souls. That an egg is an egg is a consideration with me of interest to awaken thoughts profound and grave. I should discover no great improvement in the flavour, nor presage amelioration of aliment, in being allowed to indulge the pleasing persuasion that the egg which I might eat might perchance be the germ of a musty Forr-elder, about to strut and crow in *formâ Galli,* had I not disappointed him. Something rather shocking to the finer feelings I may discover in a practice I lately heard of—that of an affectionate family extending their love to their poultry, and manifesting the universality of their tenderness by calling their chickens and ducklings after the names of the various members of the family circle. Would it not be a startling announcement—'We've got Dick for dinner to-day; will you have his leg?' Again: 'May I have the pleasure of helping you to a slice of grandma's breast, and a *hug-me-close?*' 'To-day we have frolicsome Miss Katie; what can I send you?' 'Oh! her merry-thought, of course.' Suppose it should happen to be the pious maiden-aunt Dinah, who looks more tempting through her white sauce than ever she does in her sprucest habiliments; would any of the numerous party ask for, or expect to find in her, any merry-thought?

"None of these considerations create that trepidation I cannot plead guiltless of, whenever I absorb an egg. It is not the idea of having eaten what, mature and fattened, would have been a more plentiful repast; of having swallowed a venerable ancestor or a defunct friend; but of having devoured *one's* Triumph! Conceive the mortification of the most remote persuasion of the possibility of having mingled with salt and bread-and-butter, and washed down with infusion of souchong and sloe-leaves, a bird that, had he not been thus nipped, or rather masticated, in the bud or germ, might have stood the proudest, and crowed the loudest, in Bingley Hall, at Birmingham! Then, again, as bantam's eggs don't reckon in our tale, I am constrained by the government I live under, to see those *'Ωα σιγαλόεντα* of my charming little pets brought to the breakfast table. My terrors are mocked by the administration of *three* smaller, instead of my two larger mouthfuls, without remorse or compunction from the purely mathematical calculation, that my chances *ovandi, ab ovo*—of an ovation hatched out of an egg—are diminished, and my agonies increased, exactly in the ratio of three to two. Is it not enough to paralyse one's arm, and cause it to drop from one's expectant lips the morsel that might have eventuated in the faultless feather and the tail immaculate? The subject is too nervous to be dwelt upon longer.

"I must, however, take it as a melancholy *datum,* that whatsoever I may say against the practice, eggs will still be part of the food of humanity. The next consideration is, how they should be prepared. I do not intend to pass the limits of the breakfast-table. There lies my *forte.* To meddle with the multifarious compounds that adorn the dinner-table I essay not. One thing I must say, as honorable members of 'another place' declare, when they are about to fumble for an hour or two for the handle of a subject without finding it—one thing I must say, and that is, that we once had fewer religions and one more sauce. But I am as far from reminding the world of the egg-sauce one used to have when a youngster, with roast turkey or chicken, as I would be from recalling the memory of a foot-path that once lay through one's grounds or garden. I adhere to the day's primal meal.

"M. de la Fontaine had the honour of repairing the deficiencies of my attainments in French under M. de Couffon. Indeed, M. de C. was an able instructor, and, moreover, a perfect gentleman; but he had always to answer me so many questions concerning Louis XVI., and his family, the Battle of Waterloo, Trafalgar, the Nile, &c., &c., and particularly to enlighten my young mind as to the number of Frenchmen required to beat one Englishman, that the study of the French language occupied a merely evanescent point of the hour assigned to each lesson. That M. de la Fon-

taine succeeded better, I can easily believe; but one thing he taught me, which I shall never, and, as I am about to impart it, advise *you* never to forget. And that was how to cook an egg.

"I will first give you the mode and rationale, and then the benefit of a description of my own apparatus.

"An egg should not be boiled. Do not suppose that I advocate roasting it, or that I am about to afflict you with a dissertation on the reason or manners of the thing. An egg, I repeat, should not be boiled; it should only be scalded—*vulgo*, coddled. Immerse your egg in, or, which is better, pour upon your egg boiling water. For time; proportion your time to the size and number of your eggs, and the collateral accidents. If you cook your egg upon your breakfast-table (as de la Fontaine did in his slop-basin), more time will be required. But if you station your apparatus on a good, wholesome hob, where there is a fire, and so the radiation of heat is less positive, less time will suffice. The latter way is mine, winter and summer, and the differences of the surrounding circumstances equalize, or nearly so, the time. I keep one egg under water 9 minutes; two, 9½; three, 10; and four nearly 11 minutes. The yolk first owns the power of the caloric, and will be even firmly set, while the white will be milky, or at most tremulously gelatinous. The flavour, superior to anything which a plover ever deposited, will be that which the egg of the gallinaceous domestic was intended to have; the substance, that which is delectable to the palate, and facile of digestion. There is perfect absence of that *gutta percha* quality, in the white especially, at once the result and the source of dyspepsy. I believe that eggs would be much more patronised, and much more wholesome, if boiling were discarded, and De la Fontaine's, the Parisian, mode universally adopted. I have always given especial heed that amongst my *Lares*, my private household gods, there should be one, *my very own*, especially bright and introducible, tin saucepan. To this I have a frame-work made, something very like what is called an egg-stand, which fits the saucepan, and is easily inserted and withdrawn. From this you may take the eggs when done, and pop them into egg-cups, or you may place the frame on a plate, and set it on the table. I may sum up by adding, that *immersion* of the eggs in *boiling water* are the conditions of success.

"I now lay down my pen in the most delicious state of self-complacency. I have taught you, and perchance through you the British world, how to prepare, enjoy, and digest an egg."—R. G. S. B.

NEW SYSTEM OF BEE-KEEPING.

Seeing that I have already had my garden invaded by a swarm of bees this year—no case of *desertion*, but a *real swarm*, the parent hive doing well—and that so early as last Tuesday (March 23rd), it will not be considered premature if I come forward at this time to urge as many of your readers as were disposed in October last (from reading my papers in The Cottage Gardener), to try my new system of bee-management—to urge them, I say, to carry into effect *this season* their then half-formed resolution. We are already in the midst of the breeding season; and all originally strong hives will, if I mistake not, be more forward than usual this year, so that early swarms may be confidently looked for. This makes me anxious to lose not a day in counselling the novice—and all who intend to try my system are *ipso facto* novices—how to manage the business of swarming, according to my plan, to the greatest advantage, and with the least possible danger of ill success. As to *ill success*, I can promise there shall be none (I might say there *can* be none) to those who adopt my purely *cottage* system, to which I purpose confining my remarks to-day And I do hope (I would go so far as to *entreat*) that *every* intelligent bee-keeper, who has the opportunity, will give that system a fair trial this year.

It cannot be too strongly insisted on—of this I am growing more persuaded daily—that the securing of *early*, and withal *strong swarms*, is the grand secret in successful bee-management. It may sometimes be necessary in ungenial seasons to give a saucer of food occasionally to an early May swarm, but this small additional trouble by no means weakens the truth of my statement. The apiarian's motto should be, "*Early and strong swarms.*" Now I have become convinced that this is only to be obtained *by placing the hives in the warmest and most sheltered situation possible.* Hives so placed, however, must be rich in honey, or it will be impossible for them to survive the great demand on their stores which such a position will necessarily create. Warmth rouses the activity of the bee, and as soon as it begins to move its appetite is awakened. To *poor* hives this appetite is a dangerous enemy, but to rich hives a great benefit, for it begets internal warmth in the hive, and so promotes *early breeding*—that is, an early and rapid increase in the population—and therefore *early swarming*. Poor hives, therefore, cannot swarm early. Perhaps the earliest swarms of all will come out of *rich small* hives, but they will of necessity be *small* swarms, or else, if large, they will be almost sure to ruin the parent hives. *Large useful swarms* can only come out of large rich hives, such as will hold about a bushel. If these are put in a warm sheltered situation, they will be sure to swarm early and strongly, though perhaps a little later than small hives otherwise similarly circumstanced. But though the hives should be warmly placed, they ought also to be very well protected from rain and excessive heat by very thick hackles, yearly changed for new ones. As to shape, it matters not what form the hives take—let the cottager please himself; at the same time, the cheapest improved cottage hive, and the best, is the original one of Mr. Payne's invention. It is flat, straight at the sides, and has a good-sized hole at top. A flat stone, or wooden board, will do very well to set the hives on; the latter, I think, is best.

I need scarcely repeat (see page 12, vol. vii., of Cottage Gardener) that *when the swarm rises, it is to be put into a large new hive, and set as soon as soon as hived just in the place of the parent stock, which must be moved to a new stand.* This is the great peculiarity of my system. Its advantages are these (to repeat what I have before said)—*first*, the swarm *must* become a large one, never mind how small it was when it first issued, because every full-grown bee of the parent hive which has been out in the fields will be sure to find its way to it, seeing that it occupies the place where the old hive stood. *Secondly*, there will be no casts, and for this very reason, that the old hive was left with so few bees, that the young queen will not find bees enough to lead off another swarm at the usual period. And *thirdly*, although there were not a sufficient quantity of bees, *at the usual time*, to force the young queen to lead off a second swarm or cast; yet when all the eggs left by the old queen come to be hatched, *i. e.*, in about three weeks time, the hive will be nearly as full of bees again as before, so that there will be both enough bees, and plenty of time, to collect a larger store of honey against the winter than is generally the case. Another peculiarity of my system is this—to *keep* the old hives every year, because they have young queens, and plenty of honey, which is not of the best quality, and to destroy or take up the swarms, because they have *always* the old queens, and of course contain *virgin honey*. Not only so, the swarms managed according to the above plan will (having so large a population) collect a far greater quantity of honey than ordinary swarms. In a fair season, a first-rate swarm of this kind will ordinarily gather a full half-a-cwt. of honey. So large a store, however, will require room to stow it in; the hive, therefore, should have a good-sized hole in its top, and when it seems getting heavy, should have a small wooden-box or hive set over it, which the bees will often fill, besides their hive; either of these must be well protected from sun and rain. The best time to take up swarms to plunder them is any time after the third week in July. Hives very rarely increase in weight after that time, except where heath abounds. The brimstone pit affords the most humane method of dealing with the doomed bees, for they are dead in an instant, and there is no place for cruelty. This is my advice to cottagers, if not to all bee-keepers. At the same time, all the brood-comb, while still warm, should be carefully cut out (the brood of *worker*-bees I mean), and put into an empty hive turned up in a pail, and so arranged that the combs shall not lie flat upon each other. Set the pail *close* to one of the keeping-hives, which is to be placed upon it for three weeks, and then to be moved back again. To steady the two hives so joined together in the pail, three or four strong stakes should be fixed in the ground

close to it, and the hives firmly fastened to them, and plastered about their points of junction; take care to have one good-sized hole. The bees will descend from the upper hive, hatch out the young brood, which will strengthen it very much, and help to produce earlier swarms another year.—A Country Curate.

TO CORRESPONDENTS.

Greaves—Canvass for Walls.—A correspondent (*G. I.*) writes to us obligingly as follows:—"A correspondent, a fortnight back, was inquiring where *greaves* for ducks and fowls could be bought? Of any tallow-*melter* in town or country. The trade price is £8 per ton; I should consider 10s. per cwt. a fair price; if carted any distance, a proportionate increase must be paid. In reply to Mr. Fish (*canvass for wall-trees*), I use, because I had them free of cost, some waste canvass bags, which I have always found to exclude frost; and my cotton-merchant informs me he buys the canvass of T. & D. Henry, 44, Mark-lane, Sailmakers, in pieces of thirty-six yards long and one yard wide; cost about 3½d. per yard.

Covering Walls (*J. N. Gibson*).—We have covered fruits for some twenty-five years, and every year we try to cover more. Retardation is one of the chief secrets of success in this; take care that your gardener rightly distinguishes between this and protection, although the same material be used. It is the handling it makes the difference. Our doctrine alarmed a worthy lately; "What," said he, "uncover in such an east wind?" "Yes," we reply; "uncover on very cold and dull days, and cover on sunny and warm ones." Now, however, the trees are in full bloom our policy is just reversed. About greenhouse vinery, see an article by Mr. Errington in our number for April 1st.

Mildew on Vines (*Ibid*).—Let us advise you to use a little fire-heat in the afternoon only of every cold and unseasonable day, whether in April or August; *conditions* frequently go before mere *periods*. Sulphur applications will be found fully described in back numbers. We apply four to six ounces to a house 30 ft. long, 16 ft. wide, 9 ft. high at back. It is simply applied by a painting brush, once a month, on the lower or return hot water pipe, which is never above 120°. Be cautious with greater heat. We hold the monthly application of sulphur as the best safeguard in modern practice. Vines, in pots, feed well at root, and expose every leaf to the light, stopping occasionally rambling shoots.

Sundries (*X. Y. Z.*).—*Richardia* is the same genus as *Calla*. *Duvacua ovata* is a half-hardy shrub, allied to *Schinus*, a Terebinth. The *Peganum* you mention, was not recorded when *The Cottage Gardeners' Dictionary* was in the press. It is a Ruewort, and not worth much. *Stauntonia latifolia*, you mention from Veitch's list, is *Holbollia latifolia* in *The Cottage Gardeners' Dictionary*. The *Benthamia* must be trained against the wall, unless you are in the south-west of England. We can say nothing of your other lists for a wall, not knowing your whereabouts, but the plants are all well worth a wall, except the *Periploca*, *Celastrus*, and *Lycium*. The other list you want cannot be made out properly for the same reason. Our correspondent cannot find the following plants in sale catalogues, and hopes some one will be able to put him on the right tract to find them—*Hottonia palustris*, *Nuphæa advena*, *Aponogeton distachyon*, *Typha latifolia*, *Ranunculus plantagineus*, and *Saxifraga ciliaris*. Some of these names we can only guess at from the M.S.; but our readers may learn two useful lessons from it, the first is, that the locality should be named when fine half-hardy plants are inquired about; and the second, that all names, whether of persons or plants, should be written in a clear hand, because a single letter puts us on the wrong scent.

Hotbed (*A Young Gardener*).—It is now too late to make a hotbed of tan for your cuttings. As you do not know much about tan, you would lose a considerable time in getting the tan ready, and also some trouble in making the bed, therefore use the dung-bed this spring, and we shall put you in possession of all the details about tan in time for your next bed.

Mignonette (*Minnie*).—There is only one kind of mignonette, and that is the one trained as tree mignonette.

Calceolaria (*A. D.*).—Accept our thanks for the offer of your variegated calceolaria, but that kind of variegation is never permanent. The leaves will turn quite green in another soil. There is no such plant as "a scarlet *candytuft*," but the name is often seen in sale lists. There is no perennial *mignonette*, except our own common favourite, which is a tolerable perennial in hot countries. The names you cannot find in the Dictionary are quite new, or belong to perfectly useless plants. Depend upon it, that any old plant not found in *The Cottage Gardeners' Dictionary*, is not worth inquiring about.

Lawn (*W. P. L.*).—A lawn that "is very well drained," and recently "covered with new turf," if that turf was at all good, requires, or ought to require, nothing but the constant use of the roller, and to be mowed *once* a-week during summer. If you mean that the new turf was laid down *on* the old turf, it was very bad practice. The old should have been removed.

Burning Clay (*T. H. F.*).—There was an excellent article on the subject given a few weeks ago. See page 387 of vol. vii.

Canaries (*W. M.*).—Two hens will breed in the same cage with one cock often; but it would be better to put the two hens together for some time before the cock is placed with them, as the hens are apt to fight with each other, and it is found, if they are together for some time before, they become reconciled. The cock should *not* be removed, as he will feed both hens, and often, while one is sitting on her eggs will continuously feed her. Moreover, when the young are hatched, and are not sufficiently able to feed themselves, and the mother hatching another brood, the cock will not only feed the mother on the nest, but the young ones also.—*W. Rayner*.

Sowing Tropœolum Tricolorum (*J. R. P.*).—The seeds of this plant ought to be sown as soon as they are ripe, because, when they are kept dry for a time, some, and the greater part of them, will not vegetate till the second season. Suppose the seeds are ripe in June and then sown, they will not vegetate till the end of the following September, the natural time for the tubers to grow. When they sprout, keep them cool and close to the glass, and when they begin to climb, put small sticks round the pot for them to run upon, and let them remain in the same pot till the first growth is completed, and the bines die down; then put the pots on a dry shelf till the end of the following August, when shake them out, and put the tiny roots or tubers in fresh pots and soil, and, as they grow, treat them as so many old plants. It is now too late to sow them, as, probably, they would not vegetate till next October. Too many were printed of the work you name, to render a second edition probable for some years to come.

Sowing Annuals, &c. (*A Novice*).—Sow the *White Eschscholtzia*, *Leptosiphon*, and the *Silene*, at once, where they are to bloom in the open ground; but you had better sow the *Saponaria* and *Centranthus* in pots, and prick them out afterwards as you say. The *Physalis edulis*, or Cape Gooseberry, requires exactly the same treatment as the Tomato. The fruit is a soft round berry, inclosed in a hood formed by the bladder-like calyx. The plant is a coarse, strong grower, and will require to be kept well pruned all the summer, and, under similar conditions, it will be ripe about the same time. Whether a tenant can remove trees, &c., depends on what agreement he made on entering; the law is, that no trees can be removed without the consent of his landlord.

Flower-garden (*A Learner, S. B.*).—Scarcely was the ink dry on the remarks on plans in Mr. Beaton's weekly article, when yours arrived. He sees by it that he omitted remarking on the necessity of giving a line on the plan to represent the front of the house. On the supposition that your house is opposite No. 3 or No. 1, or that you first see the garden from one of these points, you have managed remarkably well. We never saw the calceolarias so disposed before. Your plan is quite new, and the secret of it is in the size of the beds; had the centre ones, 13, 14, 15, and 16, been as large as 1 and 3, or 2 and 4, your planting would not do. No. 9 is better as it is than with the variegated Alyssum; but you have a fine chance of introducing an edging of it round No. 1, and it will last there as long as the scarlet geraniums; then, if the house is opposite 3, 12 should change places with 10, but if the house is on the other side, they are better as they are. We wish you every success with this beautiful arrangement, and the more so, because you have complied with our rules to the very letter; but ladies almost always do.

Sowing Mangold Wurtzel (*W. B.*).—The seed should be covered about two inches. As to *Rape* for milch cows, we should prefer *coleworts* sown in the middle of June, and transplanted as you say. The *thousand-headed cabbage*, too, from plants sown in the middle of May, would be very productive crops. These, however, want good soil. On poor soil, the *Dutch* or *Stone Turnip* might be obtained. All these would give way betimes in North Lancashire for spring cropping.

Various Queries (*S. H. I.*).—If your annuals are now up in pots or pans, you had better prick them off, three or four plants into 4-inch pots, and protect still in frames or the like. One of the very worst kinds of gardening is that of sowing annuals early in pots or pans, to take up the spare room in the greenhouse or frames that other plants of more consequence ought to be occupying. The middle of April is the best season to sow either hardy annuals in the borders, or the half-hardy in pots or pans, which may be sown on the same day, and put into some gently-heated structure, and when up, and fit to handle well, may be pricked off three or four plants into other small pots, gradually inured to the open air during May, so as to have stocky, nice plants to transplant out in the various spots or beds in the flower-garden. All the plants in your first list are generally treated as half-hardy annuals. Your *Bartonia aurea*, &c., &c., are best sown out in the open borders where they are to flower. Your plants enclosed are *Sedum virens*, *Spiræa filipendula*, *Ulex stricta* (?). The other is too small a bit to be recognised. As you did not number your specimens, how can you apply the names?

Geometrical Flower-gardens (*A Yorkshire Gardener*).—There is no work upon this subject with working plans. *Kentish Hero* is a good yellow calceolaria for the borders.

Sundry Queries (*A Subscriber, &c.*).—*Roses* may be now grafted, inarched, and budded. Divide *violets* in autumn. You will see what Mr. Appleby says about *rose cuttings* to-day. All the *ceanothuses* may be propagated by cuttings in April and August. *Double wall-flowers* are propagated by cuttings, under a hand-light, in May and June.

Myrtle Slips (*F. Orgill*).—These, which have been struck in water, should be now potted singly in small pots, in very rich soil, well watered, and placed under a hand-light. Your *pear-tree*, which blossoms profusely, but produces no fruit, probably has defective flowers. Try one branch with the "ring of Pomona;" that is, remove immediately every particle of bark in a circle all round it, an inch wide, and quite down to the wood. Let us know if that branch bears better than the others.

Pits and Frames for Wintering Plants (*A young Gardener*).—So far as we comprehend your plan, you are quite right. You may have a four-inch wall, honey-combed or pigeon-holed to admit heat from manure into a close chamber, or into a bed of fermenting materials for growing things requiring a high temperature. Such a wall, to heat a place for keeping frame and greenhouse plants in winter, even though the plants stand upon a close-jointed boarded flooring above the chamber to which the heat had access, would be inapplicable, as the least crevice in the boards, and you used fresh dung, would soon settle all your plants. Besides, the heat would be unequal, and you would run the risk of having too much or too little, not to say any thing of the damp. All this may be obviated by building your wall solid, and thus you will have what heat you want, and no danger from steam or damp. The less artificial heat for such a purpose the better. If you filled the linings at the beginning of winter with leaves and dung, and covered them from the weather, a mild, genial heat would be given off inside of the wall for months, and a turning and a little addition would always renew it. Above ground, whether brick or boards, your walls for what you mention would be best protected by a couple of inches thick of straw tied neatly along them. It will be a fierce frost that will penetrate that, if well done and kept dry. *Cineraria seed*, sow now.

Anemone Seed (*Sarah*).—Sow it now on a nice warm border, protected by a frame, or a thick mat. In May, sow in the open air.

Ipomopsis (*Ibid*).—Give this plenty of air, and elevate the plant on a pot. Beware of touching the stem when watering it.

Erica (*Ibid*).—As you have no greenhouse, prune back the branches that have flowered, place the plant in your pit, keep it rather close, and the sun-heat will raise the temperature, which will cause fresh shoots to break; syringe it frequently in an afternoon. If the plant needs a fresh pot, give it one when the new shoots are from half-an-inch to one inch in length; keep close, and warm again for a few weeks; give a sufficiency of water, and by-and-by expose to more air, until towards the close of summer you allow it to have the full light of the sun to ripen the wood thoroughly, and you will be rewarded for all your labour and care. See articles on *Cape Heaths*.

Josling's St. Alban's Grape (*A. Z.*).—We do not know this grape from having cultivated it ourselves, but we hear from those who have cultivated it that it differs little, or not at all, from the *Chasselas musque*. Will some of our readers state what they *know* about this variety.

Silver Pheasants (*C. D.*).—These require the same food as the common pheasant. We hope for full information on the subject shortly.

Chimonanthus Fragrans (*Ibid*).—Plant it out, and train it against a south wall. A rich sandy loam suits it best.

Summer Duck (*Queen Mab*).—Mr. Bailey, 113, Mount Street, Grosvenor Square, will give you the information you require. It is now usually called *Querquedula sponsa*. Other queries next week.

Orchard Unproductive (*G. R.*).—Scrape off all the moss from the trees, and scrub them with brine. Sow salt at the rate of twenty bushels per acre over the whole, and then turn in the turf, and keep the ground well hoed all the year. Prune in the autumn, and manure round each tree next spring.

Gutta Percha (*H. Stokoe*).—We think this is preferable to any metal as a lining to a pickling-tub.

Red Spangled Dorkings.—A correspondent (*H. H.*), wishes to know where, and at what price, she can obtain these fowls.

Chicken Nursing (*C. W.*).—Mr. Punchard, of Blunts Hall, near Haverhill, the most extensive rearer of Cochin China fowls, says that "twopence per head per week is a fair price to give for rearing of chickens to the age of eight or twelve weeks. Cottagers consider a penny, or three-halfpence, a remunerating price for chickens, but the care of a choice breed for another party I think entitles them to something more than is made in the common way, and, as such, I give them twopence."

Water-proof Calico (*Sarah*).—We do not know where this is sold ready prepared. It is easily made by applying a composition, for which we have given a recipe more than once. For shading a greenhouse we should prefer canvass, as prepared calico soon decays.

Names of Plants (*Sabrina*).—*Sisyrinchium anceps* and *Bermudianum* are too nearly allied for us to speak with certainty from so small a specimen. Yours is probably one of them. The time of flowering is very varying. The other plant is *Scilla verna*.

Hives (*E. R. T.*).—There is a person at Cambridge, whose name is *Cory*, who makes a hive of his own invention for sale, and it is called the "Cory hive." The Story hive we have no knowledge of.

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Advertisements.

WEEKLY CALENDAR.

M D	W D	APRIL 15—21, 1852.	Weather near London in 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
15	Th	Easter Term begins.	29.830 — 29.800	49—40	N.E.	01	6 a. 5	54 a. 6	4 19	26	0 af. 4	106
16	F	Ray's Locustelle seen.	29.856 — 29.793	57—43	E.	46	3	56	4 39	27	0 19	107
17	S		29.857 — 29.761	63—39	S.W.	01	1	58	4 55	28	0 33	108
18	Sun	1st, or Low Sunday.	29.981 — 29.865	64—31	S.W.	—	IV	VII	5 12	29	0 46	109
19	M	Alphege.	30.031 — 29.739	65—34	S.W.	—	57	1	sets.	○	1 0	110
20	Tu	Sun's decl., 11° 40′ N.	29.864 — 29.462	63—48	S.E.	20	55	3	8 a 4	1	1 13	111
21	W	Oxford and Cambridge Term begins.	29.549 — 29.519	65—48	S.W.	26	53	4	9 12	2	1 25	112

Meteorology of the Week.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 57.6° and 37.7° respectively. The greatest heat, 71°, occurred on the 17th in 1844; and the lowest cold, 20° on the 16th in 1847. During the period 104 days were fine, and on 71 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

THALICTRUM. MEADOW-RUE or RUE-WEED.

This genus belongs to Polyandria Polygynia, class and order of the Linnæan system. Its botanical name is derived from the Greek, *thallo*, to grow green, and alludes to the bright green colour of the young shoots. The English name refers to the usual place of growth of the commonest species, and to their leaves somewhat resembling those of the Rue. It is one of those popular names that is very likely to mislead the young botanist, for neither in habit nor in qualities do any of the species resemble Rue. Bastard Rhubarb is a name also applied to the genus, not only on account of the yellow colour of the roots, but of their purgative quality.

Generic Characters.—*Calyx* none, unless, with some botanists, we choose to call the corolla a calyx. *Petals* four, rarely five, roundish, blunt, concave, and deciduous. *Stamens* very numerous, with hair-like filaments, rather thickish at the top, of various lengths, but longer than the petals; anthers oblong, drooping, bursting at the edge. *Pistils* very numerous, without styles; stigmas egg-shaped, swollen, downy. *Germs* many, superior, egg-shaped, channelled. *Seeds* same number and shape as germs, furrowed or winged, and tailless.

Thalictrum alpinum: Alpine, or Smallest Mountain Rue-Weed.

Description.—This is a delicate little perennial. *Root* of a few long cylindrical fibres, with runners near the surface. *Herb* quite smooth, from three to six inches high. *Root-leaves* on long, purplish, slender, upright *footstalks*, twice three-leafleted, and somewhat pinnate, their little roundish or wedge-shaped veiny *leaflets* convex, variously lobed, dark green, often purplish, and shining above; milky-green and concave beneath. *Stipulas* oblong, membranous, united to the base of the footstalks at each side. *Stem* simple, erect, round, about twice as long as the leaves, milky-green or purplish, smooth and naked, except in luxuriant specimens, which have an almost stalkless, compound leaf, about the middle. *Flowers* in a cluster, drooping when fully expanded, but afterwards erect; flowers eight or ten, each on a small stalk, with a small, either leafy or membranous, *bract* beneath each. *Petals* four, usually white, sometimes purplish, pointed. *Stamens* hair-like, and eight or ten in number, often purplish; anthers tawny, vertical. *Germs* usually two or four, rarely more, roundish, green, each with a whitish, spear-head-like, downy, styleless stigma. *Seeds* almost even.

Places where found.—In wet black mould, in the clefts of rocks, and by the side of rivulets, on the loftiest mountains in Scotland, Wales, Ireland, and Durham. It descends to the sea-shore in Sutherlandshire.

Time of flowering.—May to July.

History.—This plant is at home only in an inhospitable climate; it is found in America, but only in Newfoundland; in Asia, but only at Kamtschatka; so Lapland, Greenland, and Iceland, are its rejoicing places in Europe. Africa does not seem to have a spot sufficiently inclement for it. It is liable to be attacked on the under surface of its leaves by a minute parasitical fungus, *Æcidium Thalictri*. This grows in clusters of a roundish form, and of a bright orange colour.

Thalictrum minus: Smaller Meadow Rue.

Description.—It is a perennial. *Root* fibrous and creeping. *Stem* from four to twelve inches high, branched, leafy, milky-green, smooth, somewhat grooved, zigzaged in the lower part. *Leaves* doubly pinnate, then three-leafleted; *leaflets* various in figure and size; broadly heart-shaped or wedge-shaped; milky-green on both sides, smooth, notched or lobed in the fore part. *Footstalks* angular, smooth; the common one short, broad, channelled above, strongly furrowed beneath. *Stipulas* interior, simple, clasping the stem, short, broad, rounded, milky-green, purplish, jagged or fringed at the edge. *Panicles* compound, spreading, accompanied at the base by a few three-leafleted, or slightly pinnate, leaves. *Bracteas* few, small, spear-headed. *Flowers* drooping, on slender stalks. *Petals* four, pale purple, with white edges, oval. *Seeds* furrowed.

Places where found.—On chalky pastures, especially where rather mountainous, and in shelly sand on the sea-shore.

Time of flowering.—June and July.

There is a variety with broader leaves, but this depends on the soil. (*Smith; Martyn; Withering; Greville; Parkinson.*)

Mr. Alexander Anderson was at the island of St. Lucia when he wrote the last of his letters that we have printed. He was then labouring under pecuniary difficulties, and his not being able to obtain an interview with Lieutenant Miller, then serving on board the *Vigilant*, so as to obtain from him a supply of money, was another of that series of spirit-subduing trials which failed to conquer Mr. Anderson's firmness of purpose. We have recurred to this reference to Lieut. Miller, not only because we have reason to believe that

he was a son of the great gardener of that name, but because we should be glad if any correspondent would inform us whether he is the same naval officer that distinguished himself as captain of the *Theseus*, at the Battle of the Nile, and in other actions under Lord Nelson? We have another reason for recurring to this subject, namely, that it enables us to give our testimony to the kindness of heart and liberality of Mr. Forsyth. Abundant are the letters in the collection confided to us, showing that to poor obscure men, from whom he could hope for no return, not only was his purse ever open, but his influence exerted to serve them.

Mr. Anderson had obtained the appointment of Hospital Mate at St. Lucia, under Dr. Young, but, he says, "the want of attending at a course of anatomical lectures is a great loss to me; nor can I rest contented until I have it in my power to do so, although I have no reason to complain of my ignorance above many of my comrades." (!) He remained at St. Lucia until the end of 1783, with the exception of a few months of its autumn, during which he was at Barbadoes. The following letter is dated from that island, 11th September, 1783.

MR. A. ANDERSON TO MR. FORSYTH.

I received your last letter (dated the 3rd of May, 1783) in the beginning of August, with one enclosed to Mrs. Mures, Dunlap, in Jamaica. I am at a loss to express my gratitude for your unwearied kindness to me. I wish not for the smiles of fortune for any selfish view, but to recompense, in some measure, the many distinguished marks of friendship I have received.

About a week prior to the reception of your letter, General Mathew sent to St. Lucia for me to come to Barbadoes to him. He received me with great kindness, told me I was to look on myself as one of his family, since which time I have been constantly with him. He told me he would give me every assistance in my disquisitions he possibly could. I am sure, from his behaviour, he will be of all the service he can to me. He has a great love for natural history, and I dare say would spare no expense or trouble to promote it as much as he can. He is the most agreeable man I ever saw; is exceedingly sensible, and has a tolerably good idea of all the sciences in general.

From some questions he asked me relative to Sir Joseph Banks, I have every reason to think his sending to St. Lucia for me was owing to some letters he had got from Sir Joseph concerning me.

I suppose he has also got the letter from the Bishop of Winchester you mentioned to me, for he pays every attention to me he possibly can.

He has frequently spoken to me about going to Trinidad, Surinam, and other parts of the Continent, and I am sure if Sir Joseph Banks would give the least hint of his desire, he would assist me by every means in his power to go to any of the aforesaid places, or any other part; at present I am doing little else than trifling away my time, for I examined Barbadoes to my wish in two weeks' time. There are some things in it to attract one's view for a few days, but it is not worth spending long time in.

I find myself in a dilemma at present, as all the medical people that were in the general hospital in these islands are dismissed, and their places supplied with others from home. I know the General intends taking me to Grenada with him, but whether he will, or can with propriety, continue my pay, I cannot say, for he has mentioned nothing about it, and it is rather a delicate thing for me to ask him; for if I knew he could not continue my pay, I would go to Jamaica directly; but I wish much to see some more of these islands before I leave them, especially Tobago. I also have a great desire to visit some part of the Spanish Main, as it certainly is the only place we know the least of, and I imagine its productions are numerous, and very different from these islands; but travelling in this country is exceedingly expensive, and attended with inconceivable hardships, so that I cannot undertake it without some assistance.

I should have applied for leave to go to Tobago before now, but as the General is anxiously expecting the packet with the definitive treaty signed, as I can go from Grenada to any of the other islands as easily as from this, I thought it better to wait events here, as then I may probably know what footing he intends taking me to Grenada on. But I do not wish to stay long in any of these islands, for if my means would have afforded it, I had seen many more of them before this period.

I hope you have received the three boxes I sent with Mr. Freeman long before this. I now send you all the specimens and seeds I have got, with some fossils of St. Lucia. As the island of Barbadoes has something in its formation and external appearance very different from any of the other islands, I could not help sending you my ideas concerning it; but as I made them not with any intention of transmitting them to you, but in my leisure hours, when I had nothing else to engross my attention; but, on looking over your letter this morning, you wished I should transmit any observations on natural productions I might make, I thought of sending them to you as they are. I hope you will excuse the dress they are in, as I have not time now to correct them.

GOSSIP.

The *Lincoln Horticultural Society* have fixed their Shows on May 25th, July 27th, and September 14th. Their prizes are liberal, and their rules good.

The *flower-gardeners of Dresden*, at a ball given by them a few weeks since, presented the ladies present with fans made of natural flowers, which, by a very simple piece of mechanism, opened and closed like ordinary fans.

Speaking of potatoes, says the author of "The Cruize of the Midge," stop till I immortalize my old mother's receipt:—

"*To dress a potato*, wash it well, but let there be no scraping. At the thickest end cut off a piece the size of a sixpence." This is the safety-valve through which the steam escapes, and all rents in the skin are thereby prevented, just as the aforesaid valve prevents a rupture in the steam boiler. If you do this, oh for the mealiness of the potato!

We have always objected to nurserymen, and other local dealers in flowers, being admitted as *Judges at Shows* in their vicinity. We have so objected, not because we think such judges would intentionally act unjustly, but because we know that even the most circumspect in cases of doubt have given the casting vote from a friendly bias. This, however, is not the chief ground of our objection, because the still more prejudicial ground exists that such judges cause suspicions in the minds of exhibitors, and if exhibitors once imbibe an opinion that unfair awards are probable, they soon withdraw from exhibiting altogether. Holding this opinion, and possessing this knowledge, we fully concur in all that is said in the following extract from a letter with which we have been favoured by an amateur poultry fancier of high position.

"I see one of your correspondents is recommending Mr. Baily as *judge at a poultry show*. I know no more respectable tradesman than Mr. Baily, but there is a strong and increasing feeling among exhibitors that dealers should not be judges; and in this neighbourhood I honestly believe that if a dealer were appointed there would be no show. I think it right that you should be aware of

this objection, in which I confess I participate, although I am also desirous that it should not be considered as applying to Mr. Baily individually."

The same good authority gives us the following result of his experience in *preserving eggs*—

"Fill a large earthen jar, such as Portugal grapes come over in, two-thirds full of spring water. Slack some lime, and stir in sufficient to make the water as white as milk, and a little thicker; let the mixture stand and settle until the lime has fallen to the bottom. Take off the scum, and the water will be perfectly clear, but let the lime remain. Place the jar, *uncovered*, in a cool place, such as a pantry, and drop in the eggs carefully day by day, as they are laid. They will keep for many months. We are now (April) using eggs put down in this way in July last, which are perfectly sweet and good."

We can strongly recommend the *Labels for Shrubs, Roses*, &c.. mentioned in the following note.

"Several suggestions for this purpose having appeared in the pages of The Cottage Gardener, I am induced to forward to you one of a kind invented by a relative of my own, who takes great delight in his arboretum, and has every specimen there very fully named and catalogued. The label I send you is composed of the same material as a common tobacco-pipe; it is nearly the size and shape of a penny, with two holes intended to receive the ends of a piece of zinc wire, the ends of which are then to be passed round the stem of the tree, and twisted together. The writing is to be with a common black lead pencil, which a drop of water fixes, I believe, for ever. This method has been in use for two or three years, and no evidence has yet occurred to cast a doubt of its utility. The labels are likewise made of an oval shape, considerably larger than the enclosed. Should the stem increase in size it easily untwists a little of the soft wire. These labels are manufactured to order by Mr. Williams, Kingsholm, Gloucester, at the price of six shillings the gross, that is to say, one halfpenny a-piece."—*A Parson's Wife.*

Fortunately the pencil writing is *not* indelible on these labels, though very permanent, so that the writing *can* be scrubbed off, and the label used for another plant.

PROTECTION OF BLOSSOMS.

On all sides we hear wailings of a most ungenial spring; what the metropolitan gardeners used to term "the black thorn winter" has, indeed, reigned supreme for the last three weeks at least. Verily, the prospective gifts of Pomona are fostered by a churlish nurse, and woe to him who is fond of leaving every thing to what shortsightedness calls chance. These north-easters, accompanied almost nightly by some half-a-dozen degrees of frost, are not particularly qualified to make converts in the non-protection way. Ample copings, and front-coverings will surely be more in fashion than hitherto. The day is at hand, when as much night covering as will ward off frost and frosty winds will be better appreciated; when the difference between a judicious amount of protection and mere coddling, through mistaken views, or mere apathy, will be nicely separated, and the use and abuse of the principle be carefully distinguished.

We have before stated our impressions, that the whole subject of covering to the tender buds of fruit-trees in course of development, should be reviewed under two divisions, viz., retardation and protection. These two processes, which undistinguishing minds have ever been too apt to confound, are nevertheless essentially distinct; the distinctness not dependent on the material used, but on the operator. In order to understand this matter aright, a somewhat close consideration of the conflicting elements the gardener has to deal with must be grappled with. It is not singly a question of frost, of sunshine, or of winds, but all combined; what doctors would term a complication. Retardation, according to our acceptance, is capable, in the majority of cases, of carrying out two most important matters; one, the insuring a root action in unison with the branch development; the other, increasing the chances of floral impregnation through the increased temperature of the period, together with the absence of at least one portion of the frosts incidental to early spring.

We have covered a vast extent of trees and bushes this spring, most of which was accomplished in the beginning of February. The one portion, superior wall trees, have canvass, and the rest are done with spruce boughs. The canvassed trees have been managed strictly on the retarding principle up to the time of blooming, and since that, on the protective principle. The canvass, by the retarding system, was uncovered, on an average, about three days a-week; sometimes two or three days successively. On all very cold, dull, and windy days, the trees were sure to be exposed, and as surely covered during sunshine. By these means, they have been retarded at least a fortnight, which we hold to be a thing of importance; and, moreover, by free exposure to every cold wind, the buds are in a most hardy state. At night, however, the trees are always covered. As soon as the first blossom opens the practice is fairly reversed; during every chance of sunshine the trees are uncovered, and as carefully covered during very inclement weather. Our peach wall is now, April 1st, nearly in full bloom, and is certainly the finest sight of the kind we ever witnessed. Apricots just beginning to cast their corolla. Pears will be unfolding their blossoms in about a fortnight, and other things in a similar ratio.

Now, there cannot be a moment's doubt that this retarding is of eminent service to the blossom in other ways than by mere surface operations. Every one must have observed in his day the impatience with which the long-imprisoned bud bursts its bonds in the event of a protracted and ungenial spring; if we mistake not, evidence of this kind will be common this spring, and not only the buds of trees, but vegetables, as brocolis, &c., exhibit a similar impatience. A moment's consideration will show that this is the mere consequence of accumulated bottom warmth, bringing the root into action before any expenditure takes place in the branches. It is well known that the earth begins to borrow of the atmosphere from the moment the latter's averages are in advance of the former, which operation will probably commence about the beginning of March; therefore, it is evident that if the cultivator can by any means arrest the development of the buds for a while, the root will be all this time increasing in action, and, consequently, the better ready to supply the needs of the plant or tree. Surely nobody will affirm that a torpid root is to be preferred to an active one; and, indeed, the covering of vine borders, the wrapping haybands round the stems of tender trees, and sundry other appliances, to say nothing of careful drainage, all attest an anxiety on the part of those who thus practice, to establish a due relation between root and branch.

And now, to those who have a short memory we say, do not forget the advent of the insect tribes, which are sure to make their appearance as soon as the elaborative powers of the fruit-trees commence. For our part, we have not left a stone unturned which might in any way act as a preventive. Sulphur, soft-soap, &c., have been called fully into requisition, together with liberal scrubbings of such things as brine; and, although such applications in the early spring months appear troublesome processes, and hinder or protract other matters at times, yet we are sure of being gainers in the end, even in the

matter of labour. Our readers may depend upon it, that prevention is much cheaper than cure, and assuredly less disastrous in its effects.

The extirpation of the aphides the moment they appear we do hold to be the most important proceeding of the spring. He who commences operations the moment one appears may count on an almost perfect immunity until near Midsummer. Who would not, by a timely movement, cast overboard such a load of anxiety? There has been but too much apathy about these blood-suckers. I have not unfrequently heard persons exclaim, "Oh, 'tis only the green fly!" But they should please to remember that there is a very close connexion—strange to say—between aphides and naked walls, barren stems, and vitiated constitutions.

Indeed, if there be one feature of improved modern gardening which claims more attention than another, it is the freedom from insects in these days of well-cultivated gardens. There is not now a first-rate gardener in England, who can either look at, or talk or write about, insect depredations with indifference. It is a great pity but that somebody who has plenty of of leisure would make up their mind to discover a cheaper remedy than tobacco. As for tobacco paper, the gardening world should at once set their face against it. The extortionate character of some dealers in it has become abominable. Eight-pence to ten-pence per lb. for an article which used to be sixpence! and when at the latter price and unadulterated six times as strong. A great portion of what is now sold is, we are informed, rough paper from paper warehouses, deluged in lamp-black water, to which a little tobacco juice has been added for conscience (?) sake. R. Errington.

EARLY HARDY BULBS.

In the preface to the volume of The Cottage Gardener just concluded, we are ordered to keep this vessel well up in the wind's eye against the *trade* winds. The meaning of that order I take to be this,—that the trade of book-craft might get other vessels afloat, steering on the same tack as ourselves, and that if we let any of them go a-head of us we might lose the first of the market. But I see no reason to fear, even if the French President himself were to come across our bows; and if the worst come to the worst, we could raise eighty thousand volunteers, without a Militia Bill, to defend our coast against all the *trade* winds within the compass. Let all the readers of The Cottage Gardener make notes on their spring flowers, send them to our helmsman for these pages, and the thing will be accomplished before May is out, and here is an example:—

This very week I saw a pretty spring flower, which I had not seen before for the last three-and-twenty years. The owner called it the Dwarf Jonquil. It is dwarf enough, it is true, not more than four or five inches high, but it is no Jonquil, although it belongs to the same family—the daffodil tribe. All the true Jonquils have the leaves rounded like a rush, with a slight channel up one side. *Narcissus gracilis* is the nearest of them to the Jonquils; but the one that I saw is the true *Ajax minor*—a very old bulb, which was known, if not named, by Linnæus. (It is *Narcissus minor* in the *Cottage Gardeners' Dictionary.*) I think Mr. Appleby could furnish the plant from this description. It flowers in March. There is only one flower on a stalk, and the stalk is not six inches high; the cup, or centre part of the flower, projects beyond the true flower; the leaves are glaucous, or milky green, very blunt at the point, flat on the upper side, and rounded below. It is one of the prettiest and most hardy of the family, and, coming into flower so early, is a valuable border plant, to be treated in all respects like the crocus, and would make a nice contrast in a crocus arrangement, being in flower at the same time. I saw lots of it in pots for forcing last Christmas, which came into bloom before the end of January, with merely the protection of a small greenhouse. This little bulb has a melancholy interest in my eyes; it was the very last bulb on which Dr. Herbert experimented, endeavouring to get a cross between it and another slender-leaved one, which blooms at the end of the autumn, by keeping the pollen dry through the winter, till this bulb flowered naturally—according to an assertion in *The Gardener's Magazine*, to the effect that pollen of Rhododendrons might be gathered on the Alps of Thibet, sent over to England, and would be as effectual in crossing as if it were the produce of the next garden; but the bulb-experiment failed.

There is no tribe of bulbs more deserving of extended cultivation than that of the more hardy *Daffodil* or *Narcissus;* and although there is no end to the varieties into which they have already sported, there is still ample room for improving them by a judicious course of cross-breeding. We owe all that we now possess of them more to accidental seedlings than to the labours of the cross-breeder, and there is nothing definitively known of how far the various sections of them will interbreed with each other. All the finer kinds of them prefer a rich light soil on a dry bottom, but recent or fresh manure is poison to them; an elevated bed, on a south or well-sheltered border, would suit them better than any other, and very likely the more early kinds would seed and cross better in pots, under the same treatment as florists give to their fine auriculas and polyanthuses. If they were in pots, some of the later ones could be forced, and others could be kept back, so as to have a good assortment of them in flower at the same time, so as to provide fresh pollen for crossing; but any kind of pollen may be kept fresh enough for a few months, if it is kept quite dry in tissue paper. The only drawback to reserved pollen is, that if it does not take effect, we are apt to suppose that it is owing to its not being fresh, and we are not satisfied with the result of our experiment, although the chances are that the same pollen would fail if only gathered the same morning.

The spring *Cyclamens*, the dog's-tooth violet, *Erythronium*, and American cowslip, *Dodecatheon*, are highly deserving of being tried for crosses; they are favourite flowers with every one. I saw several patches of the purple dog's-tooth violet the other day in a mixed border, and they were four feet or more from the walk; an extraordinary bad arrangement, which must have been quite accidental. Some one had removed the roots when digging the border in the autumn, when their leaves were not up. There were six or seven other kinds of plants quite as much out of their proper places in the same border; and I mention this in order to point out a very common error in cottage or villa gardens, where the mixed border is too often planted in this *huddled* sort of way, which never fails to make a bad impression on every one who is at all acquainted with the natural habits of the plants. Now is a good time to begin to put such borders into regular order. A great part of our labour in *The Dictionary* must be lost to our readers if any of them could not tell, with that book in his hands, what place in a border every plant in it ought to occupy. A fair average of the heights, and the colours of the flowers, with the ordinary time of flowering, is given in that most useful work, and all this was intended by us to instruct our young readers how and where to plant all the more showy plants that are usually to be met with. All the little plants, as, for instance, the snowdrop, crocus, dog's-tooth violet, Ajax minor, or the smallest daffodil, should go in a line quite close to the side of the border next the walk. Then, for parting the colours, for they are almost all in bloom at the same

time, the snow-drop is white; the crocus white, blue, and yellow; the dog's-tooth violet purple and white; and the little Ajax yellow, with a flower larger than any of the rest, but not an inch farther from the ground. These colours may be arranged just as any one pleases, and being from what we may call bulbs, they can be changed every year if one chooses to go to the trouble of getting up the roots; at any rate, let us have a beginning at getting in these, and all our border mixtures, according to their heights, wherever such is needed. I would on no account disturb the plants just now, but let us have a lot of tallies, or number sticks, and go to one end of the border the first fine day, and put a name to every plant all the way through, and those we cannot make out the names of we must number, beginning with 1, 2, 3, 4, and so on; then, as the plants are being named or numbered, the names or numbers ought to be written on a slip of paper, and at night take *The Cottage Gardener's Dictionary* to find out the height of every plant on the list; the colour might be marked, and also the time of flowering; then, when the whole are checked, or proved, make a list of them in the garden-book, alphabetically. Any time through the summer, or in the autumn, when a plant appears to be ripe, or at rest, if it is not in its proper place, according to the height of it, let it be removed with a ball of earth, planted and watered, and watered again and again, if it seems to require it, before it takes to the new place.

Now, I know a lady who is very fond of her flower-borders, and equally fond of talking about them with old gardeners like me, when they call; and I know, also, the first thing I shall hear when I call again will be, that "It is all very well for you gardeners to point out the way how to put the borders into such and such arrangement; but what is one to do who does not know the names of one-tenth of her plants. We began the other day with the tallies, as you said in The Cottage Gardener, but I am almost ashamed to tell you, that three-parts out of four of them have only the numbers, because we did not know the names; but I think we have improved on your plan, if I understand it right; the first one we did not know we marked 1, as you said, and less than two yards off we met with the same plant again, and there are six more of them in different places along the border. You did not say how all these should be numbered, but I ordered number 1 to be put to the whole of them." "Quite right, madam; quite right, and if you are not too much engaged, I have got a couple of hours to spare to-day. The weather is fine, and, if you please, let us go out to the garden, and perhaps I can name some of the plants for you." Any other chance visitor might do the same, and in a few months, it is surprising how many names one might pick up. Every new name ought to be written on the tally and in the garden book; as a last resource, let a sprig of this, that, and the other, be sent in bloom to the office of The Cottage Gardener, and the name is sure to come out; but never adopt this plan until you are satisfied that no gardener or friend within your call knows the name, because we have such a wonderful deal to attend to besides, as they say in Suffolk. By the by, there is a bunch of flowers of the "*Kilkenny Anemone*" on my table from a kind lady, S. S. They prove to be the common border Anemone, but we appreciate her attention just as much as if they were quite new to us, and in return, if S. S. will mark her flower-beds on the plan as was directed last week, we shall do as much for her as we possibly can (see "Answers to Correspondents" to-day); indeed, all of us are very sorry when we cannot answer such and such things as are sometimes asked of us, for we know full well that paying strict attention to every communication is the surest way of keeping up our useful craft in the wind's eye; as for the *trade* winds, they are all in our favour,—our sails are full of them, and from the right point; but I have been sailing to-day in a circle, and brought my letter to the point I first started from, but, I hope, without a breach of "the customary command of our captain" to "keep her up."

D. Beaton.

CAPE HEATHS.

(*Continued from page 7.*)

Pruning.—The *time* of pruning, as has been already stated, must be regulated by the period of blooming. In all kinds that flower in winter, spring, and summer, the pruning should be given when the flowers fade. Those that bloom in late autumn and early winter may be shortened, but not finally cut in until spring. When the heaths are kept in a growing temperature during winter, ranging from 43° to 50°, pruning may be resorted to at any time, but those cut late in autumn and winter, as soon as they break afresh must be kept in the best position for light and air, otherwise the young growth will be spindly. The *mode* of pruning must depend upon the habit of the plant as respects quick or slow, compact or rampant, growth. Many kinds that grow slowly and compactly, require nothing more than nipping out the point of those shoots that come stronger than the generality. Something like consternation was excited some time ago, by the statement that a first-rate cultivator pruned his heaths with a pair of large scissors, using as little ceremony with them as if they had been thorn or yew hedges. No grower would think of using thus such kinds as *Tricolor*, or *Hartnelli;* but such rough usage might safely be indulged with such strong-growing kinds as *Wilmoriana* and *Hyemalis*, and even some of the stronger varieties of *Ventricosa*. We, however, have no wish to recommend such uncouth instruments for such a purpose, but would prefer a clean sharp knife, or a pair of those beautiful pruning scissors made by Mr. Turner, of Sheffield, which cut almost as clean as the sharpest knife, and leave not a semblance of a bruise behind, while the cut is always clean across, and not in a slanting direction, as generally left by a knife; for many purposes these pruners are a useful appendage for the waistcoat pocket of the amateur. I dislike common shears for this or any purpose where plants are grown for ornament, as there is thus produced a tendency to the formal; not but strong-growing kinds would flourish as well by being clipped all round into any shape that suited the proprietor's fancy, presenting as close an outline as a newly cut hedge, but then, until the new growth broke in upon that outline, there would be too much of the artistic apparent to be pleasant to the generality of the lovers of plants.

In saying this I by no means hold with those reformers in the style of gardening, who are ever speaking of taking nature as our sole guide. I contend, on the contrary, that in everything about a garden the art of the gardener should be seen, and clearly seen, without the trouble of looking for it. "Imitate objects and scenes as you observe them in nature, in the world around you, and then you will be on the high road to perfection." I fear we should be getting into a devious bye-path. For instance, do your very best to cultivate a plant, or form scenery, in imitation of what nature does, and ten to one but the keen lover of the picturesque would pass unheeded your greatest efforts, to gaze with rapture on the upland fell, the ferny brake, the mountain gorge, or the silvery lake. Succeed to such an extent that even *he* would be deceived, and what reward have you for your labour? What good in forming a scene similar to that which already exists, and the forming of which cost no man a thought or a shilling? The path of honour and propriety is the middle course—neither the purely artistic,

nor the picturesque, or naturesque, but what Loudon, with his great grasp of mind, termed the *Gardenesque;* enough of the natural as the *ground work* of our operations to show that we neither servilely imitate, nor doggedly oppose, such teaching; a sufficiency of the artistic to show that, either by the mode of culture, arrangement, or combination, the untiring industry of man had been there, that, in fact, the scene is such an one as could *never* be mistaken for a natural scene.

Keeping these things in view, in pruning plants in general, and heaths in particular, the first thing is to prune according to the natural disposition, so to speak, of the plant; and then the next thing is, neither to cut as if you were shaping a wig on the block of a barber, nor yet so carelessly and seldom as if a knife was an unnecessary utensil. I met, not long ago, with an example of what I mean. One of the best gardeners in the country has manufactured some clean-stemmed, large-headed Portugal laurels, which are planted out in a flower-garden, to imitate orange-trees; and, in this case, the imitation is far superior to what the real Simon Pure often is, graced and stilted with an unsightly tub. Last year, his man Friday had cut them as true to geometric science as if he had used a line for every sweep of his weapon, and *moppish* and *lumpish* they looked, and right well did our friend grumble about them, as he longed for the summer shoots to break the monotony of the too regular outline. This year they are done to perfection; a mark of pruning is not seen, as every shoot removed is cut to a lateral shoot, and if one of the latter is shortened, it is done to a leaf, with its bud in its axil. The outline, as a whole, is extremely regular, but then it is not lumpish, because the slight inequalities here and there throw it into pleasant light and shade. In fact, the plants look so easy, graceful,—say natural, if you will,—as to convey a high idea of the refined taste of the artist who cultivated them; and yet the presence of the art of that artist is so conspicuous, that no one would imagine that such plants could be found in their native wilds. On the same principle prune Heaths, make their nature the groundwork of the operation. Do not imitate what nature does, for then all the pruning would be left to the fury of the storm and the browsing of animals. When the necessary pruning is done, every old flower, and all exhausted, withered foliage must be carefully removed. In close-growing and abundant-blooming kinds, this is a work of no little difficulty, but future success depends on both being attended to. Young, vigorous heaths, if cut over, may safely be pruned back to two-year-old wood. We have had them break from wood more than double that age, but it is always safest to reserve the pruning to the wood of the previous season's growth. Strong-growing kinds, that bloom something like spike fashion, should be cut the farthest back. I have stated that many kinds will want little or no pruning. After pruning, the plants should be kept closer than usual, to encourage growth, but admitted to an airy situation sufficiently early to prevent the growth being weak.

Training.—What was lately said as applicable to geraniums, &c., will apply to heaths. Compact kinds will need little or no training or staking, if grown in a free, pure atmosphere. For all free-growing kinds we would prefer a conical shape to any other, and in general this may be managed with the assistance of a stake in the centre, and a wire round the rim of the pot, to which the lower branches are fastened all round as the base of the sugar-loaf. "But why is this sugar-loaf shape, or rather the conical, superior to the one-sided plants, the bushy, shrubby-like plants, &c.?" Simply because the growing plants to one side is *unnatural*, because the flat-headed look, in most of our trees and shrubs, is the sign of advancing age, and, therefore, conjuring up any thing but the associations of youth and its joys; while, on the other hand, the conical form is taken by most of our favourite trees, when they have room to expand themselves, and they are yet young and vigorous, stirring up bright anticipations. "But what has the *natural* to do with it?" Just this—we will not blindly be her imitators, we will readily be her pupils, and of every one besides that can teach us a lesson. Our duty, then, is to draw our first hints from her teaching, and then to assist rather than oppose what unaided she would have done. The plant that *naturally* crawls along the ground, overhangs the cliff, or dangles from the bank, will ever be ill at ease when twisted into a balloon, or drawn into a pyramid, by means of *frames* that are quite as interesting as the plants upon them. But when plants can be grown into the pyramidal shape without opposing their natural habits, with the assistance of a single stick and some bracing threads, if thus they do *not* look more *natural* than the round, lumpy-headed specimens, which we contend they do when associated with youth and vigour, there can be no question as to the *simplicity* and saving of labour the method involves. Even when the pyramidal in shape should be adopted, however, keep our friend's laurels in view; and though striving with an artistic eye for a regular outline, allow such juttings out here, and such recedings there, as will produce an object more beautiful and harmonious, than if more artistic, or more natural.

R. Fish.

THE ACHIMENES FOR SPECIMEN PLANTS.

These plants, when well managed, form splendid objects, either as subjects for the exhibition tent, or for more general use as ornaments to our stoves and greenhouses during the summer months. Twenty years ago, the species known amounted to almost the lowest numerical figure, but now their name is *legion*. Numerous species have been introduced from the fruitful regions of South America, and these again have been multiplied by the art of hybridization, till our shelves literally are crowded to excess with them. It is now a somewhat difficult matter to find room for even a selection of the best kinds, especially when room is wanted for the hosts of *Gloxinias* and *Gesneras*, which, in the same space of time, have, by the industry of collectors, and the no less industrious exertions of the hybridizer, been multiplied amazingly. As amongst so many species and varieties it would be almost impossible to grow them all to any thing like perfection, we propose in this paper, first to make a selection of a few of the best kinds of *Achimenes*, and then to describe a method by which those few may be made to display a greater amount of bloom, and thus render them pleasant objects to look at, and show the difference between a starved lot of numerous plants in small pots, and noble specimens attractive and pleasing to the commonest observer—the mere lounger, who, to kill time before dinner, takes a stroll in the garden.

The following is a selection of the kinds we judge fitting for our purpose to form specimens with. *Achimenes gloxiniflora*, white, spotted with crimson; *A. longiflora*, blue; *A. longiflora alba*, white, with pink stripes; *A. Mountfordii* (hybrid), with scarlet flowers; *A. patens*, purplish crimson; *A. pedunculata*, orange, spotted with crimson; *A. picta*, orange-scarlet, spotted with brown; *A. Tugwelliana*, purplish-crimson; *A. venusta* (hybrid), with rosy-purple flowers.

These nine kinds comprise the best and most showy varieties. To grow them as large specimens, the following articles are necessary: suitable compost, and a number of wide shallow pans, four or five inches deep, of various sizes, but none less than a foot in diameter, nor any more than eighteen inches.

Suitable compost.—The roots of achimenes are small and fibrous, and require, in consequence, an open, light compost that they can easily penetrate. It must not only be in that state at first, but must be of such materials as will continue so till the season of growth is past. Now, the compost that will do that, may be formed of chopped sphagnum (white moss), fibry peat, turfy loam, and half-decayed leaves, in equal parts, with a free mixture of sharp sand. Chop the sphagnum or bog moss pretty fine, it will then mix better with the rest. Take out of the peat and the loam the rough tufts of roots or sod that may be amongst it, and mix them all together with the hands, but by no means use the sieve; then mix them thoroughly together, and the compost is ready for use. The shallow pans should have several holes in the bottom, to allow the free escape of the superfluous water; each hole should be covered with a largish piece of broken pot, or, where they can be had, with oyster-shells, well-washed, then place a thin layer of potsherds of a less size all over the bottom. This is, as our readers are aware, for drainage. Upon it lay a covering of the rougher parts of the compost, to prevent the finer particles from choking up the drainage; upon this latter layer place the compost, filling the pans nearly full; then select as many plants, about two inches high, as will plant each pan so full that when grown the entire surface will be hid. Place one kind in a pan or pans by itself; the smaller-growing kinds in the smallest pans, and the tall growers in the largest. *A. patens* is the least, not growing more than six inches high; the next in size is *A. longiflora*, and its variety, and *A Mountfordii*, which is an improvement upon the old *A. coccinea*; next, *A. venusta*, *A. Tugwelliana*, and *A. gloxiniflora*, then *A. picta*, and lastly, *A. pedunculata*, which will grow from two to three feet high; that they grow to these different heights is a fortunate circumstance. They can be so arranged on the stage or platform, that the tallest growers may be placed behind, the next size in front of them, and the smaller kinds near to the walk; they will then form, as it were, a bank of flowers, various in colours, and most pleasing in general effect. Two or three pans of each kind (with the exception of *A. patens*, of which there may be a greater number for the front rank) will be sufficient for a moderate-sized stove, but if they are wanted for the greenhouse also, a greater number may be planted. When all are filled, give a gentle watering, and place them in a pit gently heated; place them near the glass, and shade from midday sun till they begin to grow afresh, then admit more light, and give the necessary supplies of water and air. If they show signs of spindling up weak, nip off the top, to cause them to break more branches, and give more air to strengthen the growth.

T. Appleby.

(*To be continued.*)

CULTURE OF THE ROSE FOR EXHIBITION.

(*Continued from page 22.*)

Section 7.—Roses in Pots for Exhibition.—This is, comparatively speaking, a new art and a new feature in rose culture. A very few years ago, it was thought almost impossible to bring the rose to anything like approaching perfection or practicability as an exhibiting plant in pots. The floral world is indebted to the London Horticultural Society for proving the fallacy of this idea. They offered prizes for the best specimens, and with that spirit of enterprise, industry, and perseverance, for which the florists of England are famous, roses were produced in fair condition even at the first exhibition at which these prizes were offered, and they have steadily advanced in quantity and merit every year since then. Not only nurserymen competed with nurserymen, but amateurs with amateurs, till at length, during the last season or two, it was found necessary to have a tent nearly entirely devoted to roses in pots alone. The noble size of the plants, and the profusion of fragrant bloom on each, rendered the rose tent as attractive to the visitors as any other kind of plants, with, perhaps, the single exception of the orchid tent. And well the rose deserves this admiration, and especially when grown in pots, in the manner as they are seen in the exhibition tents at the great metropolitan shows. Such exhibitions show forth with emphatic language the practicability of growing them in pots, whether for exhibition or ornament; indeed, some of the most fragrant and delicate kinds, especially in the more northern counties, cannot be grown so well in any other way as in pots. Now, as it has thus been satisfactorily proved that roses can be grown to the greatest perfection in pots, it is desirable to know the ways and the means by which any one may, with ordinary care, succeed to grow them well. We shall divide this part of our subject into—1, house and pit for forcing and protection; 2, soil; 3, choice of suitable kinds; 4, potting; 5, pruning; 6, training; 7, general management (summer treatment and winter treatment); 8, insects.

1. *House and Pit.*—To have fine specimens of roses in pots, to flower in May or June, some considerable outlay is necessary. There should be a house properly constructed, and a pit to shelter the tenderer kinds in from severe frost and heavy rains, and to place the plants in after potting. The best kind of house is a span roof; some recommend one facing the south, with the longest lights on that side, and shorter ones to the north, but we think the best aspect is east and west, because then the plants have the benefit of the sun early in morning and late in the afternoon. The house should be wide enough to allow room for a tolerable platform in the centre, and a narrow one round the sides. The centre platform will serve excellently to hold large plants, and those round the sides will do to place the smaller ones on. The best, and in the end the cheapest platforms, are formed with a wooden frame, with iron bars, and slates to rest upon them, instead of boards. It should be high enough to bring the tops of the plants within at least two feet of the glass. This platform will last a man's life-time. Another advantage is, that it may have a coating of ashes or sand laid upon it without fear of its decaying. This covering for the pots to stand upon is of great use. If it be thoroughly wetted, now and then, it slowly gives out a moisture to the atmosphere of the house, which is very agreeable and healthful to the inmates. The house should be heated by a boiler and hot-water pipes, because the old way of heating by flues generates such a dry heat, and too frequently causes a diffusion of bad sulphurous air, that escapes through unperceived chinks in the flue, thereby injuring the plants, and encouraging the increase of the red spider, that such bad effects render the adoption of the more wholesome mode of heating with hot water very desirable, and much more healthy, both to the roses and to the cultivator. But we need not argue in favour of the hot-water system of heating in glass structures, for it is well known, and duly appreciated. The house, then, being put up of any size to suit the number of roses intended to be grown, provided with the means of heating it with hot-water pipes, and also with suitable platforms, some consideration must be bestowed upon the best means of giving air. This is essential; for when the sun breaks forth through the clouds, the heat will soon be too high for these hardy plants. Now it should be given so as not to come in direct contact with the young leaves of the roses; sliding-doors in the walls will allow ingress of fresh air the best way of any, because then it becomes heated by passing over the

pipes previously to reaching the plants; yet it is necessary, not only to let in fresh air, but also to let out that which is heated, and probably, by being confined, deteriorated. This can only be done by having a portion of the roof moveable. Mr. John Shaw, the landscape gardener at Manchester, has invented a very ingenious method of doing this, which deserves to be better known. When he puts up a house, he has the rafter made hollow, and by turning a board inside with holes in it, the heated air is let out of every part of the house equally and effectually. The way in which this is done we are not at liberty to disclose, but any one that will write to that gentleman will, we believe, obtain every information on the subject. We saw it in operation, and were very much struck and pleased with its efficiency and perfect adaptation for the purpose. T. Appleby.

(*To be continued.*)

PROPAGATION OF ORCHIDS.

(*Continued from page 22.*)

Oncidium.—This is a large assemblage of plants of various habits and appearances. The free-growing pseudo-bulb-bearing species, are easily propagated by cutting off two of the oldest pseudo-bulbs, and putting them in pots suitable to their size, giving no water till they begin to grow, and then very moderately. The large-leaved varieties, of which *O. luridum* may be considered a type, require, in order to increase them, to have a couple of the oldest leaves cut off at the base, and then to be tied to a block of wood and hung up in a shady part of the orchid-house; syringe them now and then, till roots and fresh leaves are produced, then syringe oftener; keep them on the block for one year, and then, when they begin to grow, take them carefully off the block, pot them in a very open material, and treat them in the usual way. There is a small section of this fine family that require very particular care in propagating; they are mostly from Jamaica, and *O. triquetum* will serve as the type to give an idea of the whole. To increase this small-growing, but charming section of Oncids, pass a knife through the rhizoma, and allow the pieces to remain together till the first growth is perfected. They may then be separated, and treated like established plants.

Paphinia cristata.—A very choice, rare plant, and not easy to increase. The safest way is to divide the rhizoma between the pseudo-bulbs, and allow them to stand and grow in the pot till fresh or new growths are perfected, then, at the growing season, separate them from each other, pot, and water, and give the usual treatment as if they had never been divided.

Paxtonia.—A small genus of pretty, but not very showy plants, easily increased by division at the time of potting. This is one of the very few orchids that have been increased by seed. It is a remarkable circumstance, that orchids scarcely ever in this country perfect seeds, at least none that will grow in the ordinary way—that is to ripen, be gathered, and sown as one could any other seeds of plants. We have tried impregnation, but apparently without effect; for though there appear seed-vessels, and those full of a kind of thready dust, which we supposed to be seeds, and though we scattered this stuff on branches of trees in the orchid-house, on stones, on the surface of the compost, in the pots, the only reward we ever had, with the exception of the genus we have now in hand (Paxtonia), and on one occasion, a few *Bletias*, was disappointment. And yet, in their native wilds, they must seed and propagate freely; for there is no friendly hand with a knife to divide rhizomas, and treat them rightly afterwards. We must not yet give up trying to propagate, and, perhaps, hybridize orchids by seeds.

Peristeria.—A stately genus, producing very large pseudo-bulbs. It is mostly terrestrial, and, therefore, is easily increased in the same way as *Bletia;* that is, when a number of plants are desired, break up a large one into as many divisions as it will make, allowing at least a couple of pseudo-bulbs to each division; pot these, and be very careful how they are watered, for the least excess, or water lodging in the young shoots, would cause them to perish.

Phaius.—This is a genus divided from *Bletia*, and, therefore, may be readily increased in the same manner. The noble *P. Wallichii*, is as easy to propagate as a Jerusalem artichoke. Every pseudo-bulb has dormant buds, which, when the pseudo-bulbs are divided from the old plants, will push forth, ninety-nine cases in the hundred, a shoot, and thus make plenty of plants wherever there is a large old one to work with.

Phalænopsis.—All our readers that are orchid growers will be aware that this splendid plant is very difficult to increase. We have grown plants for seven years before we could get any offsets to make new ones of. It is too scarce and dear to try experiments with, or, we have little doubt, it might be increased by single leaves with a bud at its base; it sometimes forms a young plant on the flower-stems. We saw, very lately, one so formed on a plant in the Horticultural Society's Garden at Chiswick. It is, therefore, worth while to keep on the old flower-stems as long as possible, in order to give them a chance to produce young plants on them. Sometimes, on very old strong plants, side-shoots are produced; these, as soon as they have pushed a root or two, should be carefully divided from the main stem, and be tied to a separate block without any moss, watering them only by dipping the block into tepid water, without wetting the stem or leaves of the plant. This small genus of plants is so rare and valuable, that any and all means are desirable to be tried to increase them. We need only mention that the price of very small plants are sold at five guineas yet, though they have been introduced several years. T. Appleby.

(*To be continued.*)

SEASONABLE NOTES FOR THE KITCHEN GARDEN.

The middle of April usually finds kitchen-gardens in better trim than they are at any other period, there being few crops on the ground in that state of maturity approaching to what is called "rubbishy," and the large breadths under the various seed crops just now making their appearance, excite an interest in their behalf which is not always awarded them at other times; added to which is the healthy appearance the foliage of common fruits presents, which are generally cultivated here. Now, we need hardly impress on the aspiring young gardener, who sees all these tokens of interest and promise about him, to assist, by all the means he can, to increase the beauty of the scene, which, however, we do not assume to call by any other name than "artificial," or gardenesque, as formal cultivation is sarcastically called by those who see no beauty where there is no wildness. To such we give up the sylvan scenery of the neighbourhood, and we almost wish we could give them the east wind likewise, as its baneful effect on vegetation is scarcely less than a severe winter. Even now, the beginning of April, the leaves of *Brocoli* present a fringe of decay all round their margin, besides many being completely destroyed, and some partially so, and yet we have had but little winter. The same effects attend plants of more tender character. *Calceolarias*, which had stood unscathed until the middle or end of February, have since suffered severely, and all from the pernicious effects of this east wind, or, what is nearly the same, the north-east. Now, in calling the amateur's

attention to this general drawback to English springs, we would suggest that, in arranging his crops, to bear in mind that a shelter from its virulence is very important to all tender or early produce. *Peas* that are sown in autumn ought to be sheltered from its influence, as also ought *Cauliflower* and other plants. Where no natural protection exists, some artificial one must be substituted, which will easily suggest themselves to the thoughtful cultivator. As another important point, we request him to suspend *transplanting* anything in a growing and delicate state during its prevalence, but *seeds may be sown* with perfect propriety, and injurious as it doubtless is on all but the most hardy vegetation, we all know how useful it is as a fertiliser. Being in itself more dry than currents of air from other quarters, it speedily withdraws the moisture the new turned-up ground is charged with, and insinuating itself into the many pores left by the retiring waters, it soon prepares such ground for benefiting by the next change of weather; or, if it continues long enough, it will act the part of a pulveriser itself, as has been so well exemplified the present spring, in which we never heard "of the land working so well" as it has done in most places, not even after a severe winter.

As the ground is now in a condition to receive seeds or roots of every kind, to which it also gives promise of doing justice to, we request our amateur friends to look round and see if everything is sown and planted mentioned in former calendars, and keep a sharp look out on those early sowings, for whose produce it would be difficult to find a substitute; this relates to *Lettuce, Cauliflowers, Early Potatoes*, &c., as well as those more tender things still sheltered under glass, as *Vegetable Marrow, Tomatoes, Capsicums, Ridge Cucumbers*, and, what is equally important, see that in their crowded condition they do each other no harm, neither injure the proper tenants of the structure in which they are lodgers. Much may be done in this way, and the gardener's powers of invention are never more called into action than at this important period. A few *French Beans* may now be sown in some warm, dry border, and a few more put in pans, or boxes, to start and grow, to transplant out early in May. It is better not to place such pans or boxes in much heat, as we have some doubts whether the "hardening off" removes the excitement entirely or not.

Attend carefully to *Cucumbers* and *Melons;* add more soil to the latter as it is wanted, and train, stop, and impregnate them as they keep advancing; it is thought good practice to cut away any solitary fruit that may be set, where there seems no chance of any more succeeding it quickly, and some insist the whole crop ought to have an even start, like so many race-horses, yet the anxiety to see early fruit overcomes every consideration with the first crop, that we seldom see the retarding process put in operation. The quantity of fruit good healthy plants will bring to maturity depends on so many circumstances, that we can hardly give any rules, but usually six or eight fruit to a good-sized frame light is thought a fair crop; or, in other words, if every square foot of glass produce as many lbs. of melons, the crop is good. *Cucumbers* we suppose to be in bearing, and the usual appendages applied to obtain fine straight fruit when the latter is wanted; glasses and boxes form the most common auxiliaries that way. Stop all such as show a gross habit, which, however, is more effectually checked by planting in a soil not too rich or light. When it is advisable to leave fruit to ripen seed, some care, and still more uncertainty is at work; the most successful cases we have had was in selecting a proper fruit-blossom at a time of more than ordinary promise in regard to sunshine, and the ingress of bees, &c.; this first we impregnated in our rough way, but left, what we believe to be, the most important functions to be performed by Dame Nature, and her agents, at the time when their duties were most likely to be best performed; as, we confess, being sceptical to the supposed advantage of string tied tightly round them, and other modes of confinement, such imprisonment we think no more necessary to the development of the cucumber than is tight lacing amongst the human species. If the weather be cold, linings of hot dung will be still required to renovate old beds that have been several weeks at work; this more especially applies to melons, but where fire heat exists the supply is more immediately under command. Water may also be given in greater quantities than before, and every means taken to maintain a healthy condition, to obtain which a gentle humidity in the atmosphere is necessary, not a dry, withering heat, varied by clouds of steam at stated times —such a state of things will never do; if a dung or tan bed be at work the heat there is sufficiently charged with moisture, but if flues or hot water pipes be in operation, pans of water must be placed over their heating surfaces. Be careful to introduce nothing into the melon bed likely to bring insects with them, but seed pots may occupy any vacant space for a time. Sow more *Melons* to occupy any frames that will hereafter be at liberty; those employed in forcing the early vegetables, as potatoes, French beans, &c., we suppose to be now applied to other use, and some temporary shelter made to screen the plants they are removed from. Water *young Carrots* growing in frames rather freely; manure water will be beneficial to them, and also to *Radishes*, but all crops growing in such like positions will now require a liberal supply of water; and in and around the framing ground maintain as much order and neatness as in other places. J. Robson.

ONE THING LACKING.

By the Authoress of "My Flowers," &c.

It has been said by the wisest of men, "A good name is rather to be chosen than riches;" and happy and blessed is the man who, from the fear of God, prefers His favour to the highest worldly good. But we often see that, even without pretension to religious principle, persons who have a steady and upright character among men "have their reward." The mercy of God faileth not; He is more pitiful to us than we are to each other; and we often mark strikingly His care over those who care little for Him, and "whose fear towards him is taught by the precept of men." We often see persons remarkably led through the trials of life, and sustained and provided for, whose outward conduct is moral and trustworthy, but whom, *we know*, are not possessed of vital religious principle, and who do not make the Lord their God the end and aim of all they do. Our faith must not stagger at these things. If there was no world beyond the grave, no judgment, if our joys and sorrows closed with our earthly course, we might indeed wonder that thus things should be. But a *Christian* can "both hope and quietly wait for the salvation of the Lord," without wondering at the seeming prosperity of those who walk not by the rule of faith.

Martha Williams lived for twenty-two years in the same family. She was a kind, benevolent-hearted creature to every one—to the poor—to animals—to all around, she was never weary of kindness; and she was faithfulness itself to her employers. The children of the family loved her, and gambolled round her; and it was a time of deep sorrow to her affectionate heart when the parting hour came. Her master died, the property became his son's, and the widow and daughters (who were the second family) quitted their dear home and went abroad. Martha remained still with her old master's son. She was warmly attached to all who bore the name; and she was a devoted servant to one who little deserved it. The fine old mansion was now the house of a spendthrift bachelor, and Martha was his household prop and stay. In spite of failing health she did every thing she could to keep up her master's respectability, and make him

comfortable. She pinched, and saved, and struggled with his increasing difficulties, with a steady faithfulness that never flagged or murmured, and set a beautiful example to all who serve "masters according to the flesh." But in a few years a change took place. Her master married; Martha's health was so broken that she could not fill an active situation in a family; and, as most generally happens, an old servant and new mistress did not comfortably go on. Poor Martha was obliged to leave the home of many happy years, and take refuge among her friends. She loved her master dearly; but the faithful service she had rendered did not meet its due reward. She had saved a little money, a trifling sum, and left it in his hands; and the difficulty she had to get it from him, in her sickness and distress, convinced her friends of his selfish ingratitude, although she could never see that he was wrong.

Martha's little means soon melted away, in consequence of some years of sickness and helplessness. Her friends were poor and needy themselves, but they shared their mite with her, and waited upon her with steady kindness. At length her health mended so far as to enable her to wait upon herself, and go about a little, but she was totally past active service, and subject to attacks that often laid her up. Her prospects were sadly dreary. She was a dead weight upon her friends, who worked for their scanty bread, and yet she shrunk from the Union Workhouse with great dislike. She was at this time in very trying circumstances; but a pitying Eye regarded her, and an Arm, "mighty to save," wrought deliverance.

At this very time, a family who knew her well were in a little household difficulty, and they bethought them of Martha Williams. She cheerfully went to them, staid until the difficulty passed, and was such a comfort to them that they could not bear to part with her. Her steady head, her trustworthiness, her saving habits, were invaluable; and in such a place, where there was no company, no bustle, no need for stout health and early rising, nothing but frugal fare, regular hours, and peace, Martha could do very well. She took up her residence, therefore, in this family, with a young girl to assist her, and there she still remains. Her health was at first so bad, that she was often on the point of going away. Circumstances in the family often threatened to oblige them to give her up, and once she really did leave them for a time. But somehow or other Martha is there still. She has lost the use of her right hand, but she is there still. The same gracious Hand provides for her, preserves to her a home, and food, and friends who do what little they can for her, and *she is there still.* Her own relations wonder, but so it is; and the grateful affection she feels for them, endears her to the family she lives with.

Martha Williams has many virtues, but there is one thing lacking. She has experienced the loving-kindness of the Lord; it has been clearly and pointedly shown forth; she has had relatives who have been anxious for her spiritual good; she has had warnings, remindings, and trials. But her heart is not given to God. She can speak well upon religion, she is unrepining, patient, thankful, and contented, but it is all done in a worldly way, and there is no anxiety shown to serve God in her daily walk, or to frequent His courts, when an effort is to be made. She can get up early if she is going from home; but she is not well enough to go to the morning service of the Sabbath, it "hurries and flurries" her, and there is an obstinacy and unpersuadableness about her on these points that pains and alarms those around her, and makes them tremble for her here, and hereafter too.

One thing lacking! Let us examine our own hearts closely on this point. Are we not Martha Williams' ourselves—too many of us? Do we not receive God's common and *un*-common mercies, His constant, and often amazing mercies, as things of course, for which we express gratitude *before men*, but without any dedication of our hearts and affections to the Lord? Are we not provided for in ways that surprise ourselves? Do we not receive this kindness, and that assistance, which we never expected, while we see *the Hand*, but not the Power that wields and orders it? Very few of us can boast of Martha's active, unceasing benevolence to all she sees and knows, to the poor especially, or her faithfulness, her trustiness, her willingness, her *everything*, in fact, as regards her fellow-creatures; yet too many of us are standing well in our own eyes, and others' eyes too, while we are standing as dead trees before God! This is a terrible thought. Let us dig deeply into our hearts, and see if it is not so, and let us answer the inquiry *truly*. We may shine with a fair light in the eyes of men, but unless we shine with the reflected light of Him who is the "Light of Life," our days will close in "the blackness of darkness" for ever!

"The Lord is strong and patient," but He is also *just*, for He will reward according to our deeds, and *worldly* goodness will but receive a *worldly* reward. Let us all examine ourselves, and see whether there may not be *one thing lacking*.

BEES DESERTING THEIR HIVE.

Although I am in the act of troubling you again with a greater frequency of my lucubrations, I cannot suffer the occasion to pass without noticing the supposed case of bees deserting their hive lately given in so clear and business-like a manner by your correspondent "Verax." If people, in asking the "wherefore" of any "singular occurrence" of a like kind, would only give the previous history of the swarm or stock in question, it would afford a fair opportunity to the experienced in such matters to account for it if they can. In the present instance, I have no hesitation in affirming that the *death of the queen at an unfavourable season* (probably in September or October last) was the sole cause of the misfortune. It was not, therefore, a case of *desertion*, properly so called. When bees *desert* a hive (if I mistake not) they *always* carry away with them the remnant of their honey-stores, should there happen to be any; but here were a good many pounds left behind. Moreover, the state of the hive and comb forbids the idea of any such disaster; everything was found clean and in good order. The number of dead bees found, some of which were seen alive and moving (and these *could not* by any possibility have been other than the original possessors of the hive) only a few days before, all point to the *gradual decay* of the population, as in the case of Dr. Bevan's bees, described at page 348 of his invaluable work "The Honey Bee." The condition of the stock, too, all last summer, quite corroborates the view I take of the matter. The queen was evidently in a very languishing condition, as is clear from the stock throwing *no swarm*, and yet collecting so little honey that not more than 17 lbs. of *nett contents* (of which not more than 13 lbs., at the outside, could have been *honey*) were found in October, no surplus honey, it appears, having been yielded by the stock besides. To my mind it seems clear beyond a doubt, that, after languishing in this way through the summer, she died at last of *old age* in the autumn, too late for the bees to rear another queen; or, if they did rear another, too late for her to become a fruitful mother, owing to the absence of drones, and the near approach of winter. Hence, as no eggs could have been laid since September, and not many probably for some months previous, owing to the old queen's decaying powers, the bees of necessity died away by degrees in the ordinary course of nature. That this is the true solution of the mystery is further apparent from the previous history of the hive. It was originally a first swarm of May 28th, 1850, and at that time, therefore, its queen *must* have been a year old; how much older she may have been we cannot tell in the absence of further evidence. If she led off a first swarm in 1849, as she did in 1850, she must, at the latter date, have been *two* years old *at least*, and, consequently, must have about attained the ordinary limit of (*queen*) bee life last autumn. It is my firm belief that when bees do not die of absolute *starvation*, their decay in winter, which so commonly occurs, is almost solely attributable to the prevailing practice of keeping *swarms* in preference to *stocks*, and, consequently, old queens instead of young ones, from year to year. Against this practice I have raised my voice, and I am glad to find that Mr. Payne has borne witness to the soundness of my arguments (see The Cottage Gardener, vol. vii., page 68). The only effectual way I know of for securing the maintenance perpetually of a youthful race of queen bees (and is it not a simple one?), without hazard of any kind, is that which I first gave to the world in the "English Bee.

Keeper," the principle of which, briefly explained, has already appeared in The Cottage Gardener (see vol. vii., page 12). Nor is this system effectual only in respect to the above desirable object; but it will also effectually prevent the so-frequent starvation of hives from poverty of the old stocks in autumn; for as it provides for the issue of *no more* than *one* swarm per annum, it is clear that both that one swarm, *and the parent stock*, will derive great benefit from the increased population secured to each by the absence of casting; so that, while the former shall yield a great spoil to the bee-master, the latter shall also lay up an abundant store for all its wants in the approaching winter.—A Country Curate.

PHEASANTS.

M. Temminck based his hopes on a wrong foundation when he prognosticated the silver pheasant a denizen of our poultry yards. No breed of pheasants, with freedom, will ever become domesticated for a continuance; a few exceptions there will be, and have been, as I shall be enabled to show, but their inherent disposition is erratic; they will go miles for a freak, the worst of which is, they will not come back again. So far as pugnacity, courage, and self-possession of the silver pheasant is allowed, the breed is all that can be desired, with this trifling exception—if he have not any of his own species to bully, or meet with the spirited resistance of some cock, his fighting propensities are so intolerant, mean, and cowardly withal, that he will attack the poor hens of the poultry-yard. And no race of savages are more dexterous at scalping. But I am anticipating.

I have in my days had the care of, and entered with spirit for some years into, the management of poultry, in a plain and observant way; and, so far as it was possible, aided by my employer, we tried to domesticate the gold and silver pheasant, and the common pheasant, and the partridge also, but could not succeed; for no sooner did the breeding season arrive, than the whole race of them, if at large, would disappear; the common pheasant and partridge to the woods and fields, to live and not be recognised amongst their fellows; their gaudier species to become an easy prey to the foxes, or otherwise, if an inkling of reward should flit across the minds of another description of captors, nearly allied, they would find their way home again in a *basket*, then to be placed in durance vile till the breeding season was over.

Did any of my readers ever witness a pheasant's flitting from an unnatural domicile? It is delightful to witness the cunning of the hens (as to the cocks, it is a mere "follow my leader"), apparently conscious of the proceeding; now with measured, cautious pace, under covert of some hedge; now scudding their way over open and exposed places, till they fancy themselves fairly distanced from the eye of observation, is so beautifully done, at least I think so, that the sight can only be witnessed to be conceived. I really would advise a few incarcerated beings to be purposely let loose, in order that so rich a treat might be enjoyed. But mind, they must be caught doing the thing of their own accord, not be driven or frightened to it.

Twenty years ago, my employer bought his original stock of gold and silver pheasants of the late Duke of Marlborough, the former at ten, and the latter at seven guineas a brace. For some years we bred a great many for the London market, Mr. Castang, &c., being purchasers. Finding them of late years a drag on our hands, and their determination *not* to become poultry, but for ever to remain game; my growing taste inclining to cows and pigs, and to cultivating the substantial culinary products of the garden, &c., the birds were disposed of, with the pheasantry and bantams into the bargain.

A word in passing, for *Bantams*. The kind we had were Sir John Sebright's golden spangled, which, from high keep, &c., became quite as fine as the generality of fowls to be met with in a farm-yard. Taken altogether as *they* were, we have never much bettered ourselves, though we have been trying different breeds of poultry ever since. We have now a very fine, useful breed, a cross between a Japan Dorking cock, and hens of the brown-spangled Dorkings, which I think it would be difficult to beat in these parts, barring the Cochin-Chinas. I do not yet know if we shall arrive at this ugly, useful, and popular variety.

Our poultry-yard here is circumscribed, and the quantity we keep (a cock and five hens), the mere shadow of our former self; still this number presented us with two broods of chicken last season, kept the house, a family of four individuals, supplied with eggs, have done so the entire winter, and will continue to do so. I would every homestead could number a like quantity at least, and that their possessors, by proper observation and attention to their wants, induced them to do likewise. A great deal of useful information has appeared, and now that Mr. Dixon is giving us his experience in the pages of The Cottage Gardener, much more good will be forthcoming to guide the uninitiated.

But to our pheasants. The object of my now writing is to back an opinion anecdotary, shadowings of my own experience, upon the improbability of their ever becoming domesticated, strictly so to speak, and of this a twelve years trial impels me to say they never will. Man cannot subvert the instinct, implanted within them by the great Creator, of the tiniest of these creatures. All the petting and coaxing, all the tit bits, and plumpest barley in the world, are only appreciated for a time. A solitary cock bird may now and then be content to put up with this state of things, but only place Madame in his society, and if they do not decamp, it is because they cannot. If we could but domicile the lady pheasant there would be hope. It is under the brown feather that the mischief lies.

The silver breed can, in fact, be depended upon, and may fairly be trusted at large from June to the beginning of February, with the precaution of securing them in their pheasantry at night, in accomplishing which there is no difficulty if they are accustomed to be fed there at stated intervals. It is really a very eastern clime affair when three or four cock birds start on a quarrelling expedition, which frequently comes off; they will mount the tallest trees in pursuit of each other, their screeching and peculiar guttural language at those times sufficiently noisy and quite inharmonious. I well remember two particularly pugnacious heroes, and one other (at least so I thought at the time), of an altogether milder disposition; they bore the respective names of Bob, Jerry, and Logic. Now it became the chief aim of Jerry and Logic's lives to worry the existence of Bob out of him, and it required a peculiar presence of mind in Bob to avoid their onslaughts. Alas! if one could always be on one's guard. Poor Bob! how it came to pass, I know not; though the moment I recognised Logic's sanguinary appearance one fine morning, and missed Bob, I jumped at once to a conclusion. I found Bob low down in the recess of a cellar window, Logically scalped; the bare bone of his head minus the entire top-knot, skin and all. I was really very sorry for Bob, and the poor fellow seemed to appreciate my kindness as I dressed his wounds. He recovered, with the exception of his cranium remaining bare and blanched as a camel's bones in the desert; not a particle of cuticle ever came upon that extraordinary-looking poll again. The late Viscountess Dowager Bolingbroke took him with her, some time after his mishap, to Torquay, where sad things were spoken of Bob; he made himself a complete nuisance to all around, and was eventually, I believe, secured, a very unusual circumstance, by chain and collar. People from various causes—a fall, the kick of a horse, &c., in the neighbourhood of the *os frontis*—are apt to suffer in their mental capacities; it is also on record of a man who suddenly became a genius, he never having shown the slightest tendency that way before he had the good fortune to crack his skull! But I have often thought since that Bob was naturally vicious, and only awaited the coward's opportunity and power to prove himself disagreeable.

Jerry and Logic fought on, and as a mere relaxation took to scalping the bantams. As to anything in the shape of a young chicken (their own species not excepted, if they could get at them), they were down upon their heads in a moment, and would be seen marching in triumph with the unfortunate dead dangling from their beaks. Jerry and Logic were at last disposed of.

Another outrageous fellow we had, who aimed at still higher game. He would watch on the tiles, over the back door of the house, and pounce down upon the women's heads, doing destruction to caps and curl papers, and not unfrequently drawing blood. A broomstick at last was a necessary protection for any female that appeared through

that doorway. This incurable was presented to a neighbouring baronet, where he did duty for some years afterwards by keeping guard in the coach-road, and attacking almost every one that went or came from the house: he met with an unnatural death.

Even here we have an erratic fellow, who, by-the-by, does not belong to us; he merely comes when he chooses to eat, barley for breakfast and barley-meal for dinner, or pick and choose anything to his fancy in the garden. Till within this few months he domineered sadly amongst our poultry, causing us no little anxiety when the young chickens were about: luckily the cock I mentioned above is a good husband, a kind father, and, withal, imbued with a considerable amount of spirit and spurs, and, I suppose, not relishing these autocratic principles, like a true English cock, he has lately given the invader of his rights and privileges a sound thrashing. Things go on much better in consequence; so soon as he has eaten sufficiently he now takes his departure, and struts it in the park, when lionizers exclaim "What a beautiful creature!" They litttle know how small a share of credit is due to its proprietor for the plumpness of his appearance. He is perfectly welcome to improve his appearance here, so long as he remains civil; he seems, however, determined to fight; and this very afternoon a ring of spectators was formed to witness a battle between him and the gate-keeper's cock.

The silver hen pheasants are not particularly handsome either in form or feature; they are, however, spirited, and sometimes eccentric. One, I remember, took French leave, found her way to a woodman's cottage at least a mile off, laid and roosted comfortably with his poultry, and never made an attempt to return home of her own accord; another took to a neighbouring rick-yard, allowed herself to be driven home, but would never come unless this practice was resorted to; another took to the wood, and was seen some time after making a comfortable and solitary meal off blackberries; another took it into her head to lay *forty-eight* eggs as her share for the season; and another, when let out after her laying season, as we supposed, bethought herself to steal a nest, and, when quite given up for lost, appeared again with a young and flourishing family. This is the only instance we had of a pheasant hatching her own eggs; we have enticed them to do so under every device in the pheasantry, but to no purpose. The late F. Cornwall, Esq., of Diddlebury Park, near Ludlow, tried, a great many years ago, to domesticate the silver pheasant, and just as he thought he had succeeded, they all started in a body to a barn a considerable distance off, into which they were decoyed, captured, and brought back, to be confined for the future. One thing to be said of the silver breed in their perambulations, if not too far from home, they may be driven back almost as easily as a flock of geese or turkeys.

The gold pheasants are much less sociable with man, not near so pugnacious amongst themselves, nor inclined to be quarrelsome with other species, though there is certainly no telling who's who. For instance, the pheasantry was divided by open wire-work, where the two varieties of birds were constantly within view of each other. It happened, for some reason, a golden cock bird was placed in the other partition, where was domiciled a male of the silver breed; whether from some private pique, best known to gold, it is hard to say, suffice it, that he instantly set about his silver patronymic, and gave him a sound thrashing. Did the mere force of gold overpower the spirit of silver's resistance, after the fashion of other mundane affairs? or did silver condescend to treat the matter with contempt, seeing that no *honour* would come of it? that he would be vainly contending against *filthy lucre* and not *spurs*, which were wanting in his antagonist? I quite made up *my* mind that gold was not justified in thus outraging the courtesy of silver's hospitality.

If force of gold have any thing to do with *affection*, here is a fine chance for the lady pheasants. The male birds take extraordinary trouble and attitude to display their gilded adornments before the eyes of their lady loves, who, nevertheless, praise be to them, treat the matter with the most perfect nonchalance; in fact, are rather annoyed than otherwise, by this assiduous display of *riches;* this polkerising, tippeting attendance, so to speak.

It is painful to witness the poor incarcerated hens; their whole thoughts appear absorbed with the one idea of escaping from their enclosure. The perpetual activity with which they pace the beaten path near the wire-work, speaks plainly a life of intolerable captivity.

Notwithstanding all the gaudiness bestowed upon their lords, the hens are quite as handsome. Their beautiful eyes, perfect form, and compact unassuming neatness, plead one very great excuse for all the fuss the males bestow upon them. Surely these are qualities to call forth admiration. * * I am compelled, however, sorrowing to say, they—the females—will not stay at home; that is to say, they will not live comfortably on a lawn, and bask in the sun, nor will they succumb to the circumscribed bounds of a shrubbery. Once give them their liberty, and they are sure as fate to be off, with their gallant lords dangling in their wake.

I remember the first attempt at poultryizing the gold pheasant. Two cocks were let out without the hens, and away they flew, right on end, no one knew whither; felt themselves disconsolate, I suppose, and in the evening flew back again. This device answered pretty well; by degrees they took to become tolerably sociable, generally kept near the pheasantry, and were prone to hide under the shrubs. One bird, ten years old, became particularly sociable; he was bold, would feed out of my hand, and follow me anywhere about the premises. Poor fellow! a puppy cur followed a man to the house one day, pounced upon the unsuspecting bird, and killed him in an instant. I prized that bird exceedingly. I was not manly, and could not help shedding a tear for his loss. You will smile, probably, when I tell you the enclosed feathers are sent you as a *memento mori.* Well, no sooner were the hens allowed their liberty, than they took advantage of it in the largest sense of the word. They are much cleverer in a stolen march than the silver species. The male birds, by their colour, will often point out their whereabouts; though from their activity and likelihood to fly, capture becomes difficult. The same as poultry, they are greatly improved by changing the breed. We bred from the same stock a long time; then a strange hen bird was purchased of Mr. Baily, of London, and the improvement was astonishing. A peculiar feature remained to this bird. When the young pheasants become too large for the coops, and were placed from their foster parents in the pheasantry, this hen immediately took to them, and performed the duties of a mother, calling them to feed, &c., and became as much attached to them as if she had gone through the whole natural process of the maternal affections.

The common partridge will domesticate easier than the golden pheasant. A sitting of eggs was hatched and reared by a bantam, annually, up to 1847. A covey or two have been reared near the spot, and probably are to this day.

The common pheasant will domesticate easier than all, though of course, like the others, disappearing in the breeding season. They are much more likely, however, to revisit the place of their nativity; hard weather, or some particular crotchet at other times, best known to themselves, will often introduce them. A cock bird was presented, half-grown, the only one that was reared out of a sitting of eggs. He grew up very tame, roosted with the bantams, and if the hand was held up to him near his perch, he would peck at one furiously. I have no doubt but this bird would have grown up a *solitaire*, and remained upon the premises. He was taken and set at large in the wood, and most likely soon met with a *cher ami.*

For those who breed the common pheasant for ornament, the course to adopt is to shut them up by the beginning of February, or some morning they will be missing; though not, I hope, like a brood, or at least part of a brood, we lost once. We had a man at work on the premises, by profession a drainer; a very good drainer, and an adept at poaching into the bargain; a person capable of edifying on both subjects. We happened to be standing beneath a picturesque old yew tree, a favourite roosting place of the birds mentioned above, our drainer observed them, and remarked—"How fine they were!" to which I tacitly assented. They were three cocks and two hens, just arrived at their full plumage. I did not relish his observation, and somehow wished those birds under lock and key; but as the man was at work on the premises, I let it pass, went to bed that night and slept on it, but did not awake in the morning to

behold the pheasants. Nothing was said, and Mr. Dyer never did another day's work on those premises.

If you think it would add one iota to what is already known, or contribute a link to the general chain of useful and valuable information which appears in your pages, I will, in a future paper, give you our system of rearing and management of the pheasant tribe, which was allowed at the time to be very successful.—Upwards and Onwards.

[We shall be very glad to hear again on this subject.—Ed. C. G.]

PRACTICAL OBSERVATIONS ON THE MANAGEMENT OF BEES.

By Henry Wenman Newman, Esq.

(*Continued from page* 11.)

COMPARATIVE MERITS OF A GRASS OR CORN COUNTRY FOR BEES.

Hæc circum casiæ virides et olentia late serpylla, et graviter spirantis copia thymbræ floreat.—Virgil.

(Round these places let green spurge flax, and far-smelling thyme, and much strong-scented savory, flower.)

I have mentioned in another place my opinion that a corn county in England is the most favourable for bees, and my reason is, that, having been a rambler nearly all my life, I have found by far the greatest number of bees kept in corn countries; but a good deal of woodland is certainly advantageous, on account of the honey-dew on the trees. The finest honey dew I find in my neighbourhood is on the bare bark of the *Wych Elm*, in March, before even a swelling bud is to be seen, particularly after a severe winter, on which thousands of bees are to be seen a few days before the earliest willow catkin is in blossom. The *Lime* and *Oak* are proverbial at another season. The *Laurels* for three or four months afford a great exudation for bees.

It is rather presumptuous in me to contradict so great a man as Huber, but he certainly advocates a country of "meadows and pasture," with some "fields of black grain" intermixed; perhaps we must make some allowance for the climate in which he lived. Hampshire, on account of the variety of pasturage, is one of the best counties in England for bees; it contains heath in many places, particularly in the New Forest. Going through Belgium last summer, in July, I could see little else for the bees but the buckwheat; in every fourth or fifth field was this grain in full blossom.

Should an extraordinary number of bees be desired by any amateur, he must cater for them in the way of pasturage, and that not a little, in sowing Borage, Rape, Turnips, and Clover, besides planting a host of trees favourable, such as the variegated Sycamore, a most beautiful bee-flower, out in April, and Osiers of all sorts. *The late and early blossoms are those that are wanted, as all counties in England, from the middle of May until the middle of July, afford bee pasture in abundance.* If a farmer have a large stock of sheep, or other cattle, he must have grass in proportion; the bee-owner must prepare the same.

Let the bee-owner who has the means have abundance of Crocuses, Erica carnea, Osiers of all sorts, Ribes, and Gooseberries and Currants, for the early part of the season, and within 300 to 400 yards of the apiary, for in the uncertain spring weather the bees do not go very far. In the late part of the summer there ought to be the Borage (late sown), Mignonette, Salvia, and Thyme of both sorts. If this late and early pasture were more attended to by apiarians, the failure of their stocks would not be so frequent. As an early blossom, I have lately found that the Norway Maple affords a fine pasture for bees in April; it has a yellow blossom, and is a most ornamental tree in plantations and pleasure grounds, and has the good quality of being a fast grower.

It is a great fund of amusement to visit and mark each tree and flower as it is developed, as well as to mark their early visitors.

"Thou wert alive, thou busy, busy bee,
When the crowd in their sleep were dead;
Thou wert abroad in the freshest hour,
When the sweetest odour comes from the flower;
Man will not learn to leave his lifeless bed
And be wise, and copy thee, thou busy, busy bee."

BEST KINDS OF PEAS.

I know that many of the readers of The Cottage Gardener are, like myself, members of horticultural societies, and therefore, of course, desirous to be as successful as possible in competing for the different prizes given for vegetables; but to be so they must be experienced in the choice of the kinds of vegetables they cultivate for exhibition, as there are points and properties in them, as well as in flowers, which are looked to by the judges, the principal of which are size, shape, flavour, and colour. Now, as to kinds, we will take the pea as an example. If an inexperienced amateur or cottager wished to grow one or two sorts for exhibition, and these sorts to combine good properties for showing, and also to be of a prolific and profitable kind, and having none experienced to direct him in his choice, he would naturally refer to a catalogue of some celebrated seedsman, and would there find somewhere about thirty different kinds enumerated, the most of which would have some good properties appended to them; and probably, like myself, he would have to cultivate the most of them himself, to find out, by experience, which was the best for exhibition, and of course to combine the good qualities of being prolific and profitable,—to save him the trouble and expense of going through that ordeal I will endeavour to give him my experience on the subject.

I was induced at first to try the *Ringwood Marrow*, as it was recommended (I think by Mr. Barnes) in the first volume of The Cottage Gardener: this would not do; the pods were not even opened by the judges at the show. In succeeding years I tried the following varieties, viz.—*Flack's Victory*, *Victoria Marrow*, *Warner's Emperor*, *Bedman's Imperial*, *Blue Prussian*, *Hairs' Mammoth*, *Bishop's Longpod*, *Fairbeard's Surprise* and *Champion of England*, *Burbidge's Eclipse*, *Blue Scimitar*, and many others.

Among all of these I have found none equal to the last-mentioned—that is, the *Blue Scimitar*—for exhibition purposes, as from the number of peas in each pod, and its flavour (the most essential points for exhibiting), few other kinds are comparable to it; it is also a very prolific pea, and has sometimes as far as ten, or even eleven, peas in one pod. The only objection against it, if such can be called an objection, is its height, as it grows upwards of five feet, and therefore will be considered by some as unsuitable for a small garden. The next best pea to the foregoing is, I consider, *Fairbeard's Champion of England*. This I have also been fortunate in winning with; the only objection to it is also its height; but the pea for profitableness, and which I can safely recommend for its many good qualities to cottagers or any others, is *Burbidge's Eclipse*. This I can safely vouch for as the best pea in cultivation, and combines every good property, except in size of pods, that a pea ought to have. Its height is only about two feet, and it will grow on any sort of soil. The next to it which I prefer of the dwarfer kinds is *Bishop's Longpod*; this, also, is a very prolific sort, and worthy to be grown in any garden. There is another pea deserving of notice, but its immense height excludes it from the cottager's garden: I mean *Thurston's Reliance*. This has very large pods, and of excellent flavour. The variety of peas above enumerated are many of them an early sort, and may be used profitably throughout the season. The method used to cause the pods to fill sooner, and better, is to nip off the tops or main shoots soon after they commence blooming, which has the effect of advancing them several days, besides causing them to throw out side-shoots, and of course making more blooms, and keeping them lower. Before concluding, I would take the liberty of warning my cottage friends to abstain from purchasing any new kinds of peas of pretended wonderful qualities, until they have been fairly tried, or recommended by some good authority, for to my cost I have found that many such have turned out different to what was represented in the advertisements. This advice is also applicable to all new kinds of vegetables, and new flowers also, and, therefore, my counsel is—"wait a little longer."—G. I. B.

BEE HOUSES.—GIVING WATER, &c.

As Mr. Payne has given his opinion in favour of a bee-house for a north aspect, I presume to send you a description

of one I have had in use six years, and if thought worthy, you of course are at liberty to make it known through your indispensable Cottage Gardener. I shall be thankful for any improvements that can be suggested. The house is made of wood, for two tier of hives, six in each tier, seven feet long, three feet wide, six feet high, but eight feet would be better for storying; the roof slopes to the back, and is hung by hinges to three posts, which are charred and inserted into the ground one foot; in front the roof is fastened with hooks and eyes to three posts, to which are screwed the boards forming the front. Three other corresponding posts placed fourteen inches within the front posts, to which they are united by bars, to form bearers for the floor-boards; at the back of these three posts are hung the doors to inclose the hives behind. The ends are inclosed by doors. The hives stand two inches from the front boards, through which the bees work, and a covered passage to the hives keeps them to their own homes.

The covered space between the middle posts and the back posts keeps off the rain, in case of feeding, &c., in wet weather. I have not found any inconvenience from the hives being placed so near to each other. The whole requires to be kept well painted, and the bottoms of the posts charred.

I have had in use this last summer, a simple contrivance for supplying water to my pets (bees), *i. e.*, a large milk-pan. Last spring I put about two or three inches of loam over the bottom, and planted water-cresses, filling with water, which may be kept supplied, by those who have nothing better, by a butter firkin being filled daily, and placed to drip into the pan. I have not had one bee drowned, the cresses seemed to attract them more than plain water near. All the summer I was obliged to gather cresses almost daily, which is a convenience any one may possess. I should be obliged by advice how to manage during the winter.

I shall be obliged if Mr. Payne will explain whether the box, nine inches square, described in his Guide, is for a cap or stock-box. My own boxes are eleven inches square, by eight inches high, with bars. I have thoughts of making some nine inches square, by eight inches high, but I should be glad of Mr. Payne's opinion.—Y. Z.

TO CORRESPONDENTS.

Bee-houses.—*H. W. Newman, Esq.*, says:—"In reply to 'The Country Curate,' his bee-houses are too large to suit my ideas. I think no bee-house ought to contain more than four hives to do well, and, in my opinion, only one *row*. Too many stocks, and double rows, make great confusion, and generally are very difficult to manage. The best quality of a bee-house is preventing the fresh combs melting in very hot weather. Bee-houses must be closely watched, and kept free from spider's webs, which are the means of destroying the bees in detail."

Hair-like Worms (*Theresa*).—They are specimens of the *Gordius aquaticus*, of which a drawing and description were given in our 93rd number. They are not injurious to the gardener.

Mistletoe Plants.—*C. J. P.* will feel obliged by *J. K. T.* (vol. vii., page 361) putting her on his list of friends, and favouring her with a plant of mistletoe. We have C. J. P.'s address, if J. K. T. will send his.

Shell-less Eggs (*W. F.*).—As your fowls "constantly lay eggs without shells, after which many die and others appear weakly," it is very evident that such a result is caused by the hens having an over-excited condition of either the ovarium or the egg-passage. Do not feed them "constantly on barley and oats," but give them every second meal of boiled potatoes mixed with pollard.

Suggestions.—*Perdu*, of Dublin, and *A Constant Reader*, of Sheffield, are thanked for their suggestions. They are of subjects not lost sight of.

Smoke-stained Marble (*M. M. F.*).—Wash it with a mixture of one part muriatic acid, and four parts water. Immediately the stain is removed wash the place with warm water, and then with soap and water.

Cats (*A Constant Reader*).—These are, indeed, great nuisances to flower-beds near large towns. The best remedy is to trap, drown, and bury them, without saying anything to any one.

Benefit of Hard Potting.—*A Subscriber from the Commencement* enquires if to such as New Holland plants hammering down the soil with a mallet is useful. The subject was recently adverted to by Mr. Fish, and the circumstances in which it was advantageous, and the reverse, alluded to—the chief of which were, that the hard potting was best for producing bloom, the looser potting the best for growth; but the subject deserves more attention, and it will be alluded to ere long.

Cloth-of-Gold Rose (*Windflower*).—We are surprised at the foliage falling, and the midrib remaining, and you have no flowers, though *Devoniensis* blooms freely. They are, however, different in their mode of growth—the *Cloth-of-Gold* growing very strongly, and producing its best flowers on strong young shoots. It requires, therefore, more room, water, and soil than *Devoniensis*; and though it may do in a greenhouse of the temperature of 50°, as you mention, with plenty of air, and no lack of water, it would be more at home planted out against a pillar, against the back wall, or even against a wall out of doors, with a laurel or spruce branch against it in winter, and a layer of moss over its roots.

Bedding Plants (*S. S.*).—No. 1, *Lophospermum* will not do; the single yellow *Nasturtium* will. No. 2. Never plant *Petunias* and *Geraniums* together, nor *Petunias* and *Fuchsias*. No. 3. The Missouri and Macrocarpa *Œnotheras* have flowers exactly alike, but the leaves are a little different, and the two close their flowers at the same time, and there is no other yellow flower to suit their style of growth so as to mix in the same bed. There is a light blue flowering annual of the same habit, called *Nolana prostrata*, and if your yellow bed is not one of an arrangement this will suit; but whether you will like it is another question. Sow it now. No. 4. No; not even the *Saponaria*. No. 5. *White Petunias*, if well managed, make the best of all white beds. Did you never see them at Kew? No. 6. The *White Lobelia* is the best carpet of all you name, but *Verbena pulchella alba* would be better, and the little *white Campanula pumila* the best.

Bedding Plants (*V.*).—These should receive no fire-heat from the first of April, if possible.

Felicite Perpetuelle Rose (*Joseph*).—Are you quite sure that you have the true rose? No rose-grower would ever think of budding it on another stock; if true it is preferable to cuttings to plant against the wall. The instance you quote about covering a castle was to show the cheapest, not the best way. The experience with the blush Boursault would only give you a faint idea of what we proposed with this stock. Covent Garden is the worst garden in England to buy *Hyacinth* bulbs at, as you have just proved to your cost. Nothing can be done with them but to pick off their flowers as they appear; they were forced last year, no doubt, and sent to market to sell cheap. If you had gone to a respectable shop and paid double, you would have cheaper plants. Your roots were worth about 1s. 6d. per dozen, and no more.

Tulip: Oculus Solis (*Muffin*).—"You have been and done it" sure enough, and spoiled your beautiful Black-eyed Susan tulip for this year, and very probably for the next. How could you be such a muffin as to take up this beautiful bulb in the middle of its growth, and tear off the best fang of all the roots? The *Feather Grass* and the *Quaking Grass* are the prettiest for bouquets; then some of the wild barley tribe, with their silken beards; the ribbon, or variegated grass (Arundo), is also fitting. Plants of this, and seeds of the rest, must be asked for in seed shops.

Cantua dependens (*Queen Mab*).—It is questionable if this plant is fitted for bedding out, at least we would not risk so large a bed of it as you propose this season; better try it first in a mixed bed or border, basket, &c., to see how it turns out. The *Brugmansias* are not at all fitted for bedding; we only recommend them in place of more hardy shrubs, as single objects, or groups, in very sheltered situations, near to other large plants, as choice trees or shrubs. Ask for two sorts first, the white and the yellow, or brownish red, and read over again what has been said about them.

Economical Boiler.—*An Irish Reader* will be obliged if "an old subscriber," who, at page 361 of vol. vii., writes of an economical boiler, will be so good as to describe it more fully, to say where he has procured it, also the size and shape, and if it will be answerable with a common flue, which is at present in use?

Cheap Protecting Material.—A correspondent (*M. O. M.*) has obliged us with the following note:—"I was some months ago a special juror in a case where we had to find the value of a large quantity of Manchester goods that had been injured by fire, and amongst them were £200 or £300 worth of what was termed calico fents; and it was explained to us that calico can only be exported to the continent in pieces of a particular length (I think 26½ yards), and that each piece, before being exported, has to be accurately measured, and the surplus cut off; these lengths are then sewn together into lengths of twelve yards each, and are sold wholesale at from 1s 3d to 2s the dozen of yards, of two yards wide. Each dozen may be composed of two, or, I think at most, four pieces sewn together, and are, as I have stated, called 'fents,' the material of which is from the cheapest to the best calico, the best being, therefore, but a penny the square yard."

Grasses for a Light Soil (*J. S. L.*).—In laying down your pasture on a light soil, sow *Alopecurus pratensis*, 1 lb.; *Dactylis glomerata*, 3 lbs.; *Festuca duriuscula, elatior, pratensis*, and *rubra*, 2 lbs. each; *Lolium italicum*, 5 lbs.; *L. perenne*, 8 lbs.; *Phleum pratense*, 1 lb.; *Poa nemoralis, sempervirens*, and *pratensis*, 1 lb. each; *Medicago lupulina*, 1 lb.; *Trifolium pratense*, 1 lb.; *T. pratense perenne*, 2 lbs.; *T. repens*, 4 lbs. These are for an acre.

Additional Leaf (*Verax*).—When we tell you that we cannot raise our price, and that to make the alteration you require would cost us annually more than a hundred pounds, you will see that we cannot adopt the suggestion. We would suggest stitching each number into a paste-board cover before you lend it.

Mr. Payne's Square Straw Hives (*One Desirous*).—The sizes are as follows:—Depth, 7½ inches withinside; the size of the tube used in making is ⅔ of an inch; there are two external bands of straw at the top, sufficiently deep to receive the bars and a ½-inch board, which is made to fit in exactly, and which has three slits cut in it about 2 inches each, the width of the spaces between the bars, and made to correspond with them, and 3 inches from the centre; a board with a 2-inch rim covers the whole. The bars are kept in their places by a piece of zinc, ¼ of an inch wide, bent thus, made fast to the straw by a few zinc nails.

Hive Two-thirds Filled (*F. Lewis*).—Wait until the hive is filled with combs, and till the bees show evident signs of want of room, before you put on the glasses.

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WEEKLY CALENDAR.

M D	W D	APRIL 22—29, 1852.	Weather near London in 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
22	Th	Apple flowers.	29.480—29.373	57—35	N.E.	26	51 a. 4	6 a. 7	10 19	3	1 37	113
23	F	St. George.	29.726—29.682	64—38	S.W.	—	49	8	11 23	4	1 49	114
24	S	Apis Hypnorum seen.	29.786—29.762	63—39	W.	—	47	9	morn.	5	2 0	115
25	Sun	2 S. af. East. St. Mark. Prs. Al. b.	29.848—29.841	58—31	N.E.	—	45	11	0 23	6	2 11	116
26	M	[Ds. Glou. b.	30.793—29.668	62—25	W.	02	43	12	1 16	7	2 21	117
27	Tu		29.613—29.551	52—25	N.	—	41	14	2 0	8	2 31	118
28	W	Cabbage Butterfly seen.	29.659—29.603	55—30	W.	02	39	16	2 37	9	2 40	119

Meteorology of the Week.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 59.5° and 37.9° respectively. The greatest heat, 80°, occurred on the 25th in 1840; and the lowest cold, 25° on the 25th in 1827. During the period 92 days were fine, and on 83 rain fell.

The history of the apple in Britain is traceable to the earliest period of which we have any written record. We are even fully warranted in believing that this fruit was known and cultivated by the Britons before the arrival of the Romans upon our shores, for in the Welsh, Cornish, Armorican, and Irish languages and dialects, it is denominated the Avall or Aball. The fruit, therefore, had a native name, from which our present name, apple, is evidently corrupted; and the Hœdui, inhabitants of the modern Somersetshire, appear especially to have cultivated this fruit. Their chief town even derived its name from the circumstance of its being surrounded by plantations of the apple, for it was known as Avallonia (Apple Orchard) when first visited by the Romans. Glastonbury stands upon its ancient site. (*Richard's Chron.*, 19.) The cultivation of the apple was not confined to our south-western districts, for another town named after it, Avallana, was in the north of England, and in the course of the third century we have decisive testimony that the Roman settlers had introduced fresh varieties of this fruit, and that its cultivation had become so extended that large apple orchards had been made as far north as the Shetland Islands. (*Solinus*, cap. xxii.) Traces of ancient orchards are still existing in those high northern localities, and one in the Hebrides, belonging to the Monastery of St. Columb, is described by Dr. Walker as having existed there, probably, from the sixth century. (*Essays*, ii. 5.) Others are mentioned by Camden and Leland. It is quite certain that in the middle ages the apple had become one of our staple vegetable products, for whenever the chroniclers speak of times of dearth, apples are almost always mentioned as articles causing distress by their scarcity; and in the Remembrance Office a MS. exists in Henry VII.'s (1485—1509) own handwriting, in which he records that on one occasion apples were from one to two shillings each, a red one fetching the highest price.

When our agricultural and horticultural literature commences, we find that Fitzherbert, in his "Book of Husbandry," published in 1598, has many, and, in most instances, good directions for the culture of the apple. They are, unlike the works of his contemporaries and immediate successors, the evident results of experience, and not mere translations from the classic Geoponic writers. Thus, on grafting the apple, he says, "Graft that which is got of an old apple-tree first, for that will bud before the graft got on a young apple-tree late grafted in. For all manner of apples a crab-tree stock is good, but the apple-tree stock is much better." The varieties of the apple had now much increased, for Dodoens, writing in 1583, says they were so numerous "that it is not possible, neither necessary, to number all the kinds." Gerard, writing of this fruit in his "Herball," during 1597, also speaks of the infinite varieties of the apple, but seems to attribute the variation much "to the soil and climate." "Kent," he goes on to say, "doth abound in apples of most sorts. But I have seen in the pastures and hedge-rows about the grounds of a worshipful gentleman dwelling two miles from Hereford, called Mr. Roger Bodnome, so many trees of all sorts, that the servants for the most part drink no other drink but that which is made of the apples. The quantity is such that the parson hath for tithe many hogsheads of syder. The hogs are fed with the fallings, which are so many that they will not taste of any but the best." Though the varieties were so numerous, Gerard gives drawings of but six, which we may presume were the most in favour, and were the Pome-water, Baker's-ditch, King Apple, Queening or Queen Apple, Summer Pearmain, and Winter Pearmain. Heresbach, who wrote a little earlier (1570), says the "cheefe in price" were the Pippin, the Romet, the Pome-royal, and the Marligold.

Sir T. Hanmer, writing about the year 1660, says the principal apples were "Summer Pepin, Holland Pepin, Russet Pepin, Kentish Pepin, the best supposed in England, Russeting, Gilliflower, Muscadine Queen, John Apple, King Apple, Golden Reinette, the Royal, Hollow-crowned, and Common Pearmains, Old Wife, Nonesuch, Figg Apple; all these are sold at 8d. the tree, except the Figg Apple, which is 5s." (*Gard. Chron.*, 1843, 841.)

We quite agree with Mr. Knight, Dr. Martyn, and other vegetable physiologists, in thinking that no kind of apple now cultivated appears to have existed more than two or three hundred years; and this term does not at all exceed the duration of a healthy tree, or of an orchard when grafted on crab-stocks, and planted in a strong, tenacious soil. From the description Parkinson, who wrote in 1629, has given of the apples cultivated in his time, it is evident that those now known by the same names are different, and probably new varieties; and though many of those mentioned by Evelyn, who wrote between thirty and forty years later, still remain, they appear no longer to deserve the attention of the planter. The Moil, and its successful rival the Redstreak, with the Musts and Golden Pippin, are in the last stage of decay, and the Stire and Foxwhelp are hastening rapidly after them. (*Knight on the Apple*, 6.)

Except by some overwhelming convulsion—such as the Deluge—we believe that no species ever becomes extinct, but it is quite otherwise with varieties and hybrids. These, like all other devices of man, have their limited period of existence, which by no human ingenuity can be protracted. Some authorities assert that grafting is a mode of thus protracting vegetable life, but from these we totally differ. It is, happily, quite true that grafting upon a young and vigorous stock imparts to the scion a supply of sap of which the parent stem is incapable, yet this failure is only premonitory of the departure of power which will, after a transient increase of strength, occur to its removed member. Every subsequent scion, however frequently, and whilst in apparent health, removed to another youthful stock, will be found to have a period of renewed vigour and productiveness of shorter duration than its predecessor. The Golden Pippin is occasionally quoted as a contrary proof, but this example has no such weight; for, supposing that this fruit yet exists, still it has not passed the age beyond which the period of unproductiveness and death in the apple-tree may be delayed by grafting, for we have no mention of this fruit that at all justifies the conclusion that the Golden Pippin existed much more than three centuries ago. A Pearmain apple is mentioned in records as old as King John (1205), but the Pippin is not noticed by any authority earlier than the reign of Henry VIII. (1509).

Supposing, then, that the Golden Pippin of our days is a genuine portion of the trees of 1509, handed down to us by successive graftings, yet still, though in extreme decrepitude, it has not exceeded the age assigned by naturalists as that beyond which the life of the apple does not extend. But then another question will arise, supposing our Golden Pippin does not appear to survive the allotted period. Who will undertake to demonstrate that the Golden Pippin of 1509 still exists? It is quite certain that a majority of the apples for which the title of Golden Pippin is claimed

have no pretensions to the distinction, and more than one old person with whom it was once a favourite fruit now declare that it is no longer obtainable. Be this as it may, even if the tree in question has not already departed, yet even those who maintain that it is still to be found lingering in our fruit gardens, acknowledge that it is in the last stage of decrepitude and decay: it is following the universal law of nature; no organized creature shall endure through all time. Grafting may postpone the arrival of death, as the transfusion of blood will revive for a while the sinking animal, but the postponement cannot be for a time indefinite: the day must come, in both the animal and the scion, when its vessels shall be without the energy to propel or assimilate the vital fluid, though afforded to it from the most youthful and most vigorous source.

The Golden Pippin is said to be a native of Sussex, and to have been first reared at Barham Park, situated on the north side of the South Downs. The Dutch acknowledged it to be an English apple in their catalogue of fruits, where it is called the "Engelsche goud Pepping." The French call it "Pippin d'Or," which is a translation of the English name. Worlidge notices the Golden Pippin, and says, "it is smaller than the Orange-apple, else much like it in colour, taste, and long-keeping." Evelyn observes in his Diary, 22nd October, 1685, that "at Lord Clarendon's seat at Swallowfield, Berks, there is an orchard of 1000 Golden and other cider Pippins." Catherine, Empress of Russia, was so fond of this apple that she was regularly supplied with it from England; and, in order that she might have it in the greatest perfection, each apple was separately enveloped in silver paper before it was packed. (*Phillips' History of Fruits*, 34.)

We have already noticed the early existence of apple orchards in the south-west of England, and we must not close this section without some further remarks upon that great cider district. Evelyn says that Herefordshire alone, in his time, was known to produce annually 50,000 hogsheads of cider, and, proceeding to remark on some of the apples employed in its manufacture, states that the Redstreak was a pure wilding, and within the memory of some then (1676) living was named the Scudamore's Crab, and not much known save in the neighbourhood. It is to the perseverance of Lord Scudamore, thus commemorated, that the orchards in that district are indebted for some of their best varieties. He was our ambassador to the court of France during the reign of Charles I., and he lost no opportunity of collecting scions of the best apples he heard of on the continent, and transmitting them to his west-country estates.

These western county sources of cider found an able advocate in Dr. John Beale, who published, in 1657, a little volume, entitled *Herefordshire Orchards a pattern for all England*, but only bearing on its title page his initials. He was a native of Herefordshire, which county he greatly benefited, as Gough in his Topography records. His family, which had long flourished in Herefordshire, seemed to inherit a zeal for the plantation of orchards, and the individual of whom we are now sketching the biography, was fully gifted with the family hereditament. He so raised and extended the reputation of the orchards of his county, and their produce, that in a few years it gained some hundred thousands of pounds by the increased reputation.* His enthusiastic love of the agricolan arts is manifested in every one of his writings. He was a man of talent, and the companion of the men of genius contemporary with him. Many of his letters are preserved in Boyle's works. That philosopher thus speaks of him, "There is not in life, a man in this whole island, nor on the continents beyond the seas, that could be made more universally useful to do good to all." He was in the church, was a member of Corpus Christi College, Oxford, and had the degree of Doctor of Divinity conferred upon him in 1683 by that University. It is stated that the same year was that of his death, and that he was then of the full age of eighty. Speaking of himself, he says, "My education was amongst scholars in academies, where I spent many years in conversing with books only. A little before our wars began I spent two summers in travelling towards the south, with purpose to learn to know men and foreign manners. Since my return I have been constantly employed in a weighty office, by which I am not disengaged from the care of our public welfare." What "weighty office" he filled, we know not; but it is certain that he devoted himself to other sciences besides those connected with the culture of the soil, for a letter has been published written to him by Mr. Evelyn, relative to his (Dr. B.'s) discoveries in optical glasses.

* Gough's Antiquities, p. 193.

We have more than once expressed our opinion against the destruction of the Crystal Palace, and now let one of the labouring class be heard:—

"Can it be possible that the Crystal Palace is doomed to destruction? In whose rude veins does this modern Vandalism, this fearful spirit of devastation, manifest itself at the present day? Surely the mixture of primitive Danish blood, after coursing through the veins of England's sons so many centuries, should be refined down ere this. Taking us as a nation, I am certain the response would be, 'Allow the building to remain!' It is a monument of native intellect. It has proved itself a blessing; and gained the name for order, taste, and respectability, which was not supposed before to belong to the humbler classes of Britain. It *is* an ornament to our metropolis; and would prove itself a great good for the purpose to which it would be applied, and heartily-to-be-desired, namely, a winter garden: which, with a lasting happy idea of the Exhibition itself, it would remain as a bulwark around the memories of the people.

"Are not conservatories, &c., considered necessary appendages to mansions, for the comfort and enjoyment of the great and noble of our land? When we consider this, does it not appear desirable that the million of souls, *at least*, pent up in smoke-begrimed London, at a time, too, when the rich and wealthy are enjoying the pleasures of home and refinement in the country, should have an opportunity to feast sometimes upon the beauty of Nature's divine workmanship?

"Myself, one of England's humblest sons, with nothing but my birthright to be proud of, I nevertheless claim a right to express my feelings on this matter. I was once a resident in London myself. I well know what it is to pass a dreary winter there.

"When a boy, scarce twelve years of age, I was caught up wild from the country, and placed at the watch and working jewellery business, not more than three or four hundred yards from the site of the Crystal Palace. I can well fancy what my enjoyment would then have been, if, after close attention to work from seven in the morning till nine at night, retiring to rest with aching head and hot eyes, six days out of the seven, I could have refreshed my mind and body, independent of unfavourable weather, at all seasons of the year, in a garden such as the Crystal Palace may be made to become.

"Who can depict so well as those who have experienced them, the feelings of a working mechanic, toiling all his life in the unhealthy pent-up atmosphere

of the workshops of London? Truly, it is not art the mechanic wishes to feast his eyes upon when an opportunity of leisure offers; he has enough of art, when we consider it is his *business* 313 out of the 365 days in the year. Of course we all feel a pride and interest in our handywork; but with what different feelings the rich and great contemplate the beautiful in works of art, which mainly minister for their refinement and enjoyment, than do the artizan or mechanic, who, to gain his daily bread, has to undertake the anxious, and too often unhealthy, processes of their fabrication? It is the green fields, the trees, the beauty of Nature, that form a charm for him: the resort of his imagination.

"When a long-looked-for day arrives, upon which a trip into the country was planned, which, alas! too often the case in our variable climate, turns out wet: is it not a disappointment? No! not if he have a Crystal Palace transformed into a sheltered garden to fall back upon! In a population like London how many such features as this would be likely to occur on a wet day. To thousands, that wet day may be the only one for a long season that could be spared them, or taken advantage of, and so the holiday must be had; and how, in the majority of cases would it be spent in inclement weather? Would it not be in the nearest tavern?

"Then there are wives, children, and sweethearts—what becomes of them? The day that was to form for them a recreation and pleasure, becomes one of comfortless disappointment and misery.

"Besides, for the purpose of a public garden for all seasons, consider the *site* of the Crystal Palace. Could any other place be more calculated to ensure a beneficial and lasting result for good, than by causing the people to congregate upon that particular spot? To associate us near our Gracious Sovereign; our House of Lords and Commons; our venerable Abbey; our stately parks; our nobility and gentry; our finest squares and streets; the majority of our grandest buildings; everything, in short, wearing the stamp of England's greatness and power; thus impressing upon her subjects a proud and loyal feeling that those glorious institutions of their country are their own. We are thus invited to become familiar with all that is great and good: not spurned and thrust into the background—looked down upon as a senseless, meaningless mob; a vulgar mass, incapable of either thought, conduct, or feeling.

"And again, more particularly for youth,—to schools, would such a place of recreation prove invaluable. We never part with the beneficial results which Nature impresses upon us in childhood. In our earlier years, education, coupled with religion, and the genial influences of Nature, naturally lay the strongest and safest foundation; a guide for our future development and conduct through life; features which certainly should not be lost sight of by our Legislature as regards the rising generation.

"What a striking and beneficial effect would the strange and beautiful vegetation collected from the four quarters of the globe serve to produce upon the mind of youth. What a soothing and enlightened influence upon the minds of us all. More so, I will venture to say, than the wonderful collective art of man, which, to the eternal honour of England, has already astonished our senses. A far higher order of workmanship should we find exhibited in the living beauty of the works of Creation: by the contemplation of which our minds and thoughts would be led upwards; carried through that glorious transparent arch, up to that other and still more glorious arch of the firmament bent over us, whose mighty constructor and builder is God!

"As a working man, though, nevertheless, with an eye to the interests and welfare of my country, perhaps these few homely and simple observations I have allowed my pen to trace, may be thought worthy of a consideration. I feel confident they would find an echo and a sentiment from by far the larger part of the inhabitants of London; and their aim appreciated, both as regards the present and future enjoyment of the working classes of our mighty metropolis.

"I have already had the satisfaction of publicly stating a part of my views relative to the Crystal Palace. At that time I could almost have staked my existence that the idea would never enter the mind of man to conceive its demolition. I prophesied such a piece of wantonness would not happen; and I still hope, in this instance, I may prove a prophet.

"As an Englishman, however, who likes to arrive at a point—aye, even the point of the bayonet, should it be necessary for the defence of our country—I have ten shillings ready at a moment's notice to subscribe for the preservation of the building; and ten shillings more, if need be, to ensure a fund for its future maintainance as a garden. I should be prepared still further to subscribe for the purpose of arching over the nave similar to the transept, and *then* it would be a glorious thing!

"Upwards and Onwards."

FORSYTH MSS.

In the January of 1785, Mr. Anderson accompanied General Mathew to Grenada, and now, through the conjoined home-influence of this amiable man and of Mr. Forsyth, brighter days began to dawn upon Mr. Anderson. The following letter is dated Grenada, June 1st, 1784.

MR. A. ANDERSON TO MR. FORSYTH.

General Mathew still continues my pay as hospital mate, but does not know if he can continue it, as all the appointments (for the most part) come through Mr. Adair. As the General desired Mr. Connor, now at the head of the hospital in these islands (and who is no friend of mine), to write to Mr. Adair that he intended to continue me, and that he would establish me. As at the same time Mr. Adair appointed some who had not been one-sixth of the time in the hospital as I; and in the letters he wrote to said Connor he made no mention of me at all, I have every reason to think he made no mention of me to Mr. Adair, or if he did, to my disadvantage. I should be much obliged to you if you could find out whether it is so or not, and let me know. He is a malicious, ill-intentioned man, who from his merit or services has no title to what he has got. As he is a sycophant, and by his sly insinuations he traduces the most amiable characters to answer his own malicious in-

tents, although the General gives me every indulgence and assistance he possibly can, yet this man being at the head of the department, I need expect no appointment, unless from home. But as hurting a man's character is a horrid thing, although merited, I hope you will mention nothing of it. I only wish to let you know what opposition I meet with from an illiterate and malicious man, while, through your goodness, I am honoured with the friendship of several of the first characters in England, and also in the West Indies. What contrasts among mankind!

General Mathew wishes anxiously, as do also many of the inhabitants on this island, to establish a Botanic garden in it, under my inspection, for which end the General desired me to write by this opportunity to the bishop of Winchester relative to it, as the General thinks he can procure the King's patronage for it. Without that it can never be on a proper establishment, so as to answer the intention of it, nor without it should I like to undertake it, as it might be always liable to be disannulled by a governor, or the assembly of the island. The island, I believe, will give the land, and negroes to work it, but no salary; surely two or three hundred pounds yearly would be but little for the support of such a laudable institution. By men of sense and learning it can never be opposed, nor by them who wish well to their country.

The productions of the West Indies are very little known, especially among these islands. Without some encouragement for their investigation, Britain may expect to derive but little advantage from them. I am sure few parts in the world produce such a great number of different species of vegetable productions as these islands; and were they properly known, and proper experiments made of them, great advantage might accrue to the nation. I have no doubt but the different species of *Cinchona* I have seen in these islands will yet be a valuable produce.

Every encouragement ought to be given by the nation for introducing the East India plants, which certainly could be cultivated with success, as could all the valuable plants in the world; and, from the vicinity of Grenada to the continent, the most valuable plants in South America might be introduced. But without an institution of this kind these intentions can never be brought about, and I think a scheme of this kind ought to be assisted by men in power, more especially as it is hard to say how long we may retain our possessions in the east more than we have done in the west. I hope you will lend your assistance for this establishment; I know General Mathew will do what he can to put it on a proper footing.

As I could not take the freedom of saying much on this head to the Bishop, you can mention it more particularly. I should imagine His Majesty would willingly countenance it.

GOSSIP.

It has been stated in the public newspapers, that the *Eggs* imported in the month ending the 5th of March amounted to 8,688,932; all were entered for home consumption, and chargeable with duty. This article of our imports is largely increasing, as appears by the fact, that in 1849, *ninety-seven millions* of eggs were brought into this country, and in 1850 *one hundred and five millions*. We hope to see this importation as much a matter of almost-incredible history as is that which tells us that three centuries ago we imported our salads from Holland.

We have received another letter on the subject of *Judges at Poultry Shows*. The following is an extract—

"I am very glad to find that you agree as to dealers not being judges. It is a *sine quâ non* here that the judges shall be amateurs and gentlemen of character. I have myself acted frequently, more often indeed than I like, as judge, because I would not have it said that I objected to dealers and would not take the trouble myself. If Poultry Shows are to be made useful, and carried on with good feeling and good temper, the character and position of the managers, and still more of the judges, must be such as to command, on the part of the public, a *conviction* that all will be done fairly and above-board, and this conviction will never be entertained where dealers are judges. How can a man who tells you or me to-day that he is selling us the best fowls of their class to be had, and obtains a heavy price on that assurance, pass them over to-morrow, at a Show where he is judge, in favour of anything that is not *unquestionably* superior? But this is not all: dealers buy as well as sell, and contract beforehand; it thus becomes their object and interest to get as much as they can for a particular breed of birds. The way to do this is to give them a prize or two. Can we wonder that the prizes go in that direction?"

Mr. T. Morgan, of Bishop's Waltham, Hants, writes to us as follows:—

"In reference to a communication from your correspondent, Mr. William Bridger, in The Cottage Gardener, No. 183, page 13, as to *exchange of plants between persons of different localities*, I beg to say, that I have been some time thinking of the same thing, and I shall be obliged by your inserting my name and address as one who agrees to, and wishes for, the proposed exchange of subjects, so far as I am enabled to participate in it. And I will venture to make another proposition for facilitating the objects of parties who enter into this arrangement, namely, that each should, as far as practicable, make a list of plants indigenous to the locality in which he resides, and transmit a copy of it to the others.

"Allow me, now I am writing, to add, with reference to your notice (in No. 183, page 1) of what has been recorded by Dr. Pulteney respecting the *feeding of cows*, &c., in the neighbourhood of Ringwood, on the banks of the Avon, with the *Ranunculus aquaticus*, or Water Crowfoot, growing in that river; I am well acquainted with the fact, having been born and brought up in the immediate vicinity, and when I resided there, I knew several cottagers who nearly or quite got their livelihood by keeping cows, which they fed on the plant in question, cut from the bed of the river day by day, and for that purpose they had peculiar flat-bottomed boats, propelled and guided by thrusting a pole into the ground beneath the water, and pushing with the feet, by which means they navigated the beautiful limpid stream for their pleasure or their profit.

"I have this day (April 6), for the first time this season, seen here two *house martens*, welcome harbingers of spring and summer."

It has been more than once suggested that there is more than one point in the Southdown sheep that requires improvement, and we are glad to see from the following extract that the question is taken up practically.

The Southdown and the Shropshire Breeds of Sheep.—The following letter on the subject of the relative merits of these breeds of sheep recently appeared in one of the agricultural journals:—"Sir,—At the celebrated shop of Messrs. Kirkley and Hancock, Park Street, Grosvenor Square, London, purveyors to Her Majesty, I saw exhibited, by the side of pre-eminent North Devon and Scotch ox-beef, three two-shear Southdown sheep, bred and fed by the Duke of Richmond, which took the first prize of £20 at the Smithfield Club Show. Their weights were as follows:—20 st. 2 lbs., 17 st. 1 lb., and 16 st. 5 lbs., making together 53 st. 8 lbs. By the side of these hung the Earl of Aylesford's three black-faced two-shear Shropshire sheep (not Southdowns)—weight, 20 st. 6 lbs., 19 st. 4 lbs., and 19 st. 2 lbs., making together 59 st. 4 lbs., or 5 st. 4 lbs. more than the Duke's sheep; and the most eminent judges of meat considered the quality of Lord Aylesford's sheep quite equal with the Duke's; and, if any difference, they gave the Earl's the preference, their lean flesh being quite as thick, as firm, and as fine in the grain and bone. And the black-faced Shrops bid fair, with perseverance and good judgment, to be the best black-faced sheep in the kingdom." In a second letter on the same subject, it is stated that an arrangement has been made for a similar competition between the two breeds at Christmas next, and that three experienced

butchers will be selected as judges. It will be interesting to the breeders of sheep to be also informed that the three Shropshire sheep with which the Earl of Aylesford carried off the first prize and medal, in class 26, at the last Birmingham and Midland Counties Cattle Show, were considerably heavier than those of his Lordship's feeding above-mentioned. We are informed by Mr. Ballard, of Snow Hill, Birmingham, the purchaser of the prize sheep, that their respective weights were—23 st., 21 st. 6 lbs., and 19 st. 4 lbs., the total weight of the three being 64 st. 2 lbs., thus exceeding the weight of the three slaughtered in London by 4 st. 6 lbs.—*Midland Counties Herald, April* 1, 1852.

THE PATAGONIAN FITZROYA.

(*Fitz-roya Patagonica.*)

This is a splendid new Conifer (Pinaceæ), lately named by Dr. J. D. Hooker, in compliment to Capt. Robert Fitzroy, who commanded the latter part of the expedition, begun under Capt. King, in exploring both sides of the southern extremity of South America, in the Adventure and Beagle, and whose interesting "Narative" of this expedition was published a few years ago (*Botanical Magazine*, 4616). This, as well as many other very interesting and most valuable evergreen trees, was discovered by Mr. Lobb, in those little-known and inhospitable regions along the western declivities of the Patagonian Andes, a little below the line of perpetual snow, and sent home by him to his enterprising patrons, the Messrs. Veitch, of Exeter, who have succeeded in raising plants of it, but which, we believe, have not yet been offered for sale. Respecting it, Mr. Lobb writes—"It inhabits the rocky precipices, growing to an enormous size, particularly about the winter snow line, where I have seen trees upwards of 100 feet high, and more than eight feet in diameter. It may be traced to this elevation to the perpetual snows, where it is not more than four inches in height." He also states that it "affords excellent timber." In the natural disposition of the Conifers, as arranged by Endlicher, this remarkable tree comes in between the tree Arborvitæs and the Cypress, and probably is the new section called Thuiopsis (Arborvitæ-like) by Dr. Siebold and Professor Zuccarini, in their enumeration of the Conifers of Japan, in the *Flora Japonica*.—B. J.

Propagation and Culture.—Before I offer my suggestions under these heads, allow me to remark, briefly, that one day, at the beginning of last October, when I was whistling an old tune called "Bundle and go," in comes the *Journal of the Horticultural Society* for that month, and in running down my eye on the table of "Contents" I made a dead stop at "Notices of certain Ornamental Plants lately introduced into England. By Professor Lindley," and I could get no farther. Ornamental new plants always carry the day. Before I could turn to the page, I could almost see flower-beds, ladies, and The Cottage Gardener dancing to a merry tune, myself playing the first fiddle. But on reading these "Notices" I was startled to learn, at the eleventh hour, that there were so many new conifers, *Taxads*, or yews, and other fine trees, on the hills of Patagonia, after so many naturalists had visited these parts within my own memory, beginning with Mr. Anderson and Mr. Cumming, who first made their acquaintance on these very rocks, down to Mr. Darwin and the officers of the Beagle, and yet left such a harvest for Mr. Lobb to gather in, although he missed many of the fine things described by Ruiz and Pavon, in the *Flora Peruviana*, from places much nearer the equator.

The affinity of this *Fitz-roya* to the eastern or Chinese Arborvitæ on the one hand, and to the Cypress on the other, will suggest to every gardener that it may easily be had from cuttings in the usual way, while they know that plants so obtained from this section of the order will soon make plants equally handsome with those reared from seeds; and as for its cultivation, any one who can grow a Highland pine will have no difficulty in bringing up the smallest root-morsel they can procure of it. They may still have their doubts about the hardihood of the "Prince's tree" (*Libocedrus chilensis*), but no one can have any misgiving about the hardiness of this new-comer after reading the following from the pen of Mr. Lobb :—

"During my absence I visited a great part of Chiloe, most of the islands in the Archipelago, and the coast of Patagonia for about 140 miles. I went up the Corcobado, Caylin, Alman, Comau, Reloncavi, and other places on the coast, frequently making excursions from the level of the sea to the line of perpetual snow. These bays generally run to the base of the central ridge of the Andes, and the rivers take their rise much further back in the interior. The whole country, from the Andes to the sea, is formed of a succession of ridges of mountains, gradually rising from the sea to the central ridge. The whole is thickly wooded from the base to the snow line. Ascending the Andes of Comau, I observed from the water to a considerable elevation, the forest is composed of a variety of trees, and a sort of cane, so thickly matted together that it formed almost an impenetrable jungle. Further up, amongst the melting snows, vegetation becomes so much stunted in growth, that the trees seen below 100 feet high, and 8 feet in diameter, only attain the height of 6 inches.

"On reaching the summit no vegetation exists—nothing but scattered barren rocks, which appear to rise amongst the snow, which is 30 feet in depth, and frozen so hard that on walking over it the foot makes but a slight impression.

"To the east, as far as the eye can command, it appears perfectly level. To the south, one sees the central ridge of the Andes stretching along for an immense distance, and covered with perpetual snow. To the west, the whole of the islands, from Guaytecas to the extent of the Archipelago, is evenly and distinctly to be seen.

"A little below this elevation the scenery is also singular

and grand. Rocky precipices stand like perpendicular walls from 200 feet to 300 feet in height, over which roll the waters from the melting snows, which appear to the eye like lines of silver. Sometimes these waters rush down with such force, that rocks of many tons in weight are precipitated from their lofty stations to the depth of 2000 feet. In the forest below everything appears calm and tranquil; scarcely the sound of an animal is heard; sometimes a few butterflies and beetles meet the eye, but not a house or human being is seen. On the sandy tracts near the rivers the lion or puma is frequently to be met with, but this animal is perfectly harmless if not attacked."

D. Beaton.

MELONS.

The management of the melon-frame is one of the very nicest points of gardening. Talk about pines: melons are by far more difficult to obtain with certainty in the highest perfection. This plant is by nature highly sensitive to injuries, to say nothing of neglect or omissions. Thus, no man can obtain first-rate melons if insects ravage their leaves. High-flavoured and deep-fleshed melons must not be looked for, unless the principal leaves are fresh when the fruit is ripening; and where we meet with one frame or pit with the leaves in a flourishing condition at ripening time, we shall find half-a-dozen that are in some degree blemished.

Now, how to preserve the melon plants in this fine and healthy condition, up to the period of ripening, is the pivot on which nearly the whole of successful culture must be based. There are two antagonists to health that we would especially guard the beginner against; the one insects, the other a sudden declension of bottom warmth. Thrips and the red spider are the giants of the former, and, like most other gardening evils, the being impelled to have recourse to curative measures argues a previous neglect. It becomes every one, therefore, to use preventive means, which we will shortly explain.

As to *bottom heat* declining; we know those who have argued that there is no necessity for being so particular about its declension after the fruit has completed its last swelling; but what nonsense is this? Admitting the necessity of good foliage to the end of the chapter, by what means is good foliage sustained? The absence of insects is not enough, *per se*, to accomplish this: the leaves must constantly receive a fresh supply of juices from the root; a supply at least equal to the demands on the leaf through the agency of perspiration. If any one doubts the necessity of an unremitting supply of this new blood, let him just take a melon plant in a pot, and place it under a close glass containing a humid atmosphere; immediately passing a sharp knife beneath, and cutting off most of the roots. He can then shade the glass carefully; in fact, do all he can to prevent loss by transpiration, and yet shall the plant speedily droop, not through loss of the foliage, but for lack of this new blood. Any serious depression, then, of the bottom warmth, has a tendency the same way; it induces a torpidity of root, every hour's continuance of which is, in degree, fatal to size, high-flavour, and deep melting flesh.

We have known a novice boast that he could produce splendid melons entirely without bottom heat, and when his case was looked into, it was found that the melons were not sown until the middle of April, that they were planted on a bed made in the spring, of fermenting materials, for other purposes; and that his dilapidated frame had the singular merit of possessing self-ventilating properties: thus ensuring a top-heat somewhat lower, on an average, than the soil they grew in. So that here were three concurrent causes of success; a body of material capable of still maintaining a slight fermentative action, enhanced by the atmospheric heats of July and August; a frame that would not permit the blundering manager to indulge in a top-heat, superior on the average to that of the bottom; added to which, that portion of summer which is of all others adapted to the proceeding. And all this was taken as complete evidence that bottom heat was all a fuss—so much for jumping at conclusions; and we merely name it to caution our younger readers against the danger of drawing false conclusions, for assuredly nothing is more common.

And now to an epitome of melon culture; first observing that the middle of April is a capital time for the amateur, who can only indulge in a frame or two, to carry out his views. He may thus secure first-rate melons from the end of July to the middle or end of September. If he desires them in October, he must sow in the second week of May, but he must count on some good hot dung to warm his frame with, from the middle of September.

As to soil, bed building, &c., Mr. Robson has already settled that part of the question; proceed we to the subsequent culture. The young plants having been properly reared, and having each two good shoots consequent on a stopping previously practised, one may be trained towards each angle of the frame or pit. Thus:—supposing two plants in a hill, which is good practice, and those on a hillock in the centre of the bed, there will be one shoot, and one only, towards each angle of each light. Hence, the general appearance of the frame before the runners shoot forth will be that of a cross. And now the plants, if healthy, will soon want to put forth more *leaders*, but this cannot be allowed. It is a well known fact, that the further melon shoots extend from the stem, the more fruitful are their laterals. All barren looking laterals which spring from the root end of the leaders, should be pinched away as soon as produced. The leading shoots having extended nearly to the angles of the frame, must be pinched, and shortly after they will develop laterals, the very first or second joint of which will display a perfect female blossom. If they do not, but still ramble in barren shoots, be sure that they have been maltreated.

Setting is the next consideration; that is to say, impregnating the blossoms, and to accomplish this, a high temperature is requisite,—say 80° to 90°. Every female blossom must be thus waited on daily until a good crop is set, and as large as pigeon's eggs, when all remaining blossoms, both male and female, may be pinched away. And now, henceforward, an almost daily care must be exercised in keeping down all laterals which have no connection with the fruit. It ought to have been before observed, that every lateral on which a fruit is set should be pinched at about two or three joints beyond the fruit. A little new growth may be occasionally encouraged on such afterwards, but no rambling; as soon as any new growth has produced three or four joints, let it be pinched again. Henceforth, as to the foliage, the object is to expose as much leaf-surface to the light as possible, especially the original or principal leaves. These should never be shaded, whilst healthy, under any pretext; if, however, any of them unluckily fail, the next best on the same shoot must have similar care, and so on to the end.

The next consideration is *moisture*, whether of root or atmosphere. Many pros and cons have been used by writers in their advocacy of certain soils. Now, as we take it, the pith of the matter is this:—Our climate is fitful; sometimes we have what is called a wet and dull summer, and such the melon abhors. Even in such seasons, the melon requires some root watering; and moistening the volume of the soil perforce, occasions overmuch dampness in the air of the frame, in such seasons for many days afterwards. Well, then, any soil which will endure a long while without the application of water is peculiarly adapted to dull periods,

and such a soil is adhesive loam. Mind, *adhesive loam;* not loam in a state of adhesion, that is another thing. And here lies the fact,—the melons require moisture at root, but not in the air. In such soils, filled in when dry, and in that state even trod or rammed close, one good watering of liquid manure, when the fruit is large as hen's eggs, will almost suffice the whole season. As for atmospheric moisture, that should be applied in proportion to the heat and the condition of the weather. In ordinary seasons, they require little artificial aid this way in the dung frame; and as for syringing, to keep down the red spider, we protest against it, as sulphur applications will effect that without compromising the atmospheric conditions. Melons ripening should have abundance of air; in other words, they should not ripen too fast; the excitement this way should not overmatch the degree of solar light.

We may now advert to *the insect tribes* which most infest the melon—the thrip and the red spider. For the former, we do not know if anything better than the plan broached some time since by our friend Appleby, whose great experience in every department of gardening entitles whatever is recommended by him to serious consideration. His recipe was for a minute species of thrip, which infests some of the orchids, such as the *Dendrobium mobile fimbriata*, &c. The thrip family, it is well known, are most numerous, and, like the fungi, each family, or order of plants, would seem to have its own "retainers" peculiar, it may be, to each. His plan was a fumigation, in which sulphur and tobacco were combined. However, this is a nice point to handle, and requires much caution as to the use of the sulphur, especially in so small an affair as a frame. As for the tobacco, it may be used as is usual in fumigating processes; and for the sulphur, perhaps, the best way would be to mix a handful of it with about a gallon of new sawdust, the whole put in a box, or pot, and a somewhat hot brick plunged overhead in the material.

Let those who would try this plan first practice under a hand-glass; practice simply on the life and well-being of the plant, and thus grope their own way. Sulphur, like fire, is either a useful friend or a most dangerous enemy; and men of the soundest ideas (even our clever coadjutor, Mr. Fish) approach the subject with caution. As for the red spider, we must advocate our old plan of painting the inside of the frame before the plants are inserted, with a clay and sulphur mixture; in fact, just such as we have always found effectual on the peach wall. Such may be repeated when the melons are swelling.

For *kinds* suitable to the amateur, or, indeed, any one, we should say the Beechwood, Snow's, the Bromham Hall, Terry's, and Cuthill's scarlet flesh, to which may be added the Trentham hybrid. R. Errington.

NOTES ON SPECIMENS IN REGENT STREET.

One of the best growers in this country told me the other day, that all the *forced hyacinths* he had seen round London this season, and he is an extensive forcer of them himself, were not so strong as they usually are, and if the same thing happens in the open ground, both of us concluded that the cause must be attributed to some peculiarity in the weather in Holland during the last month of May, when the bulbs were in full leaf. If they had been overtaken by a long course of dry weather at that critical period, or forced beyond their natural powers by the continuance of dull, rainy weather, either way would account for any deficiency in their strength this season. One of our correspondents complained the other day, that his hyacinths, which he bought for sixpence the root in Covent-Garden Market, did not bloom at all to his liking, and he thought the fault must be in his own way of treating them—a very natural conclusion, if we only look at the surface of the thing, but an erroneous one, nevertheless.

If we simply guard against too much confined heat in forcing hyacinths, we may rest assured that all the other bad points in our worst kind of treatment will hardly tell against them this season; they will come up as fine and strong in water-glasses as they would in the best prepared compost, in fresh moss, or in pure sand the same, so that the whole secret of blooming hyacinths, as well as most other bulbs, depends on how they were grown and ripened the year before; and this should be familiar to every one who attempts to grow bulbs. We may have a splendid bloom this year, and, therefore, believe that our management must of necessity be perfect, or how else are we to account for so fine a bloom; yet we may be giving the wrong treatment all the while, because the effect of *present* treatment, as we have just seen, will not be apparent till *next* year. Hence the necessity of being very cautious from whom we buy any kind of bulbs whatever. First-rate dealers send their orders every year to Holland, and the growers there know, that unless they send over first-rate articles they will lose their best customers. People here, who understand the meaning of economy to be good management, go to the first-rate houses for their bulbs, with which they never get disappointed; whereas, a great number of people believe that economy means cheapness, and run after the scamps who gather up the thousands of cast off bulbs among our own forcers and prime growers, who care not a fig for a root after the first year.

The finest collection of forced hyacinths I have seen for years, was exhibited the other day before the Horticultural Society, in Regent-street, by Mr. Appleby's employers, and in the lecture about them, it was mentioned that the same firm were in the habit, for years past, of treating the Society by similar contributions. As soon as I could elbow my way to the table, after the meeting broke up, I made the following notes, and if I made any mistakes, Mr. Appleby can put me right, as I suppose he must have got them all committed to memory long ago. I did not see him at this meeting, and if he did not call before the members assembled he lost a great treat; I refer to a lovely new *Phalænopsis*, called *Lobbii*, from the Messrs. Veitch, of Exeter; it was a very small plant, newly imported, and hardly recovered from the long journey, yet it produced a nice spike of charming white flowers, having the lip, or lower part, of a beautiful purplish-red colour; it was deliciously scented, and the great lecturer said that it was so difficult to give names to the different kinds of scents in flowers, that he would not attempt to name what this was, so we shall only say it was very sweet. There was another fine orchid in the room—*Dendrobium macrophyllum*—the smell of which, when we heard of it, made some of us shrug our shoulders and think of the doctor—it was exactly the smell of medicinal rhubarb.

But to the *Hyacinths:* the most marked one, because it is quite new in colour, is called *Unique*, a single flower, and the nearest thing that I can compare it to is a pale crimson mezereon; there is not another hyacinth like it, or near to it in colour; in the open ground it will very likely be of a still higher colour, and I would advise every one to order a root of it early next autumn, and, indeed, of all that I am going to name. The best single white, and the best of all hyacinths to force early because it will stand more heat than any other sort, is called *Grand Vainqueur;* the next best forcer is a single blue, called *Emicus*, or *Emicaus;* but the best blue, as to colour, according to my view, is one called *Prince of Sax Weimar; Charles Dickens*, is another fine shade of blue, say, Neapolitan-violet blue; *Laurens Koster*, a dark blue, very fine; *Richard Cœur de Lion*, another fine blue of a different tint; *Alpheus*, the best scarlet; and *Prince Albert*, the best dark—it has a black metallic

lustre. There were several others quite as good as these, but not so well marked as to shade or tint. Two gentlemen, who were criticising the collection at the same time, assisted me, and agreed with me as to the most marked for colour, and that is the point I wished. One of them spoke of *Quintin Durward*, a hyacinth that was not there, as being an excellent forcer.

There was a very old-fashioned plant on the same table; a variety from *Coronilla glauca*, the finest plant of it I ever saw. I never saw much of it about London, but in some parts in the country you see it in every greenhouse. A fine specimen of it would look well on a side-table in a drawing room, at night; but what I mention it for more particularly here, is for an edging plant to a bed of scarlet in the flower-garden, an idea which first occurred to me that very day, when the plant was being lectured upon; but I have been so accustomed to these things, that I shall stake my new cottages on this plant being the best one we possess for an edging, if properly managed; and it is as easy to keep as a common myrtle, and as hardy, if not more so. You could also keep it clipped on the edges, and over the top, and so get it more in character for a small geometric garden. One might keep a few dozens of it for years, by taking it up in October, trimming the roots, and also the branches, so as to take up little room in a cold frame, and every morsel of it will root in the spring like verbenas. Mr. Jeffries, and Mr. Salter, at Ipswich, or Mr. Barnes, at Stowmarket, could furnish large quantities by next autumn, as everybody thereabouts grows it. Sometimes the leaves come of a golden-yellow, and there were some of that colour on this plant, and if these could be kept true, by making cuttings of the yellowest parts every year, we should have another golden-chain for edging. In a highly-kept garden, where colours are much studied, *Mangle's variegated geranium*—the best of the silver leaves for edging among the geraniums—cannot well be edged round a bed of scarlets, because the flowers are pink, making a bad, weak shade against the scarlet. I often took the pains to pluck off the flowers of this sort in such situations, when I knew that a party of true critics were to look over the grounds; and the same with the flowers of the golden-chain geranium, because the trusses are so small that they make no show. The *variegated sweet Alyssum*, is, on the whole, the neatest we have after these two geraniums; and as the flowers and the leaves are silvery white, it comes in anywhere, and I am quite sure that my new foundling—this variegated Coronilla—will do the same.

In the summer of 1848, there appeared a very curious kind of *new peach*, from China, in the garden of the Horticultural Society; it was sent over by Mr. Fortune. What made it particularly striking in the fruiting, was having the fruit borne in clusters, in twos and threes, or more, on the same spur; there was not much said about it then, except as a botanical or pomological curiosity; but since then, some accounts of it appear in reports from the garden, and the other day we had a fine specimen of it in bloom at the meeting, in Regent-street, which took us all by surprise. I have not seen a finer thing for many years. There has not been a more striking, hardy plant for the shrubbery, introduced since the scarlet currant was sent home by the unfortunate Douglas. It is as hardy as a common peach or the almond; the flowers are double, but not quite, and they are of the brightest crimson colour, and would look, at a short distance, as much like those of the *Pyrus Japonica* as can be; every bud of this beauty ought to be increased this next summer, and every one who has room for a gooseberry-bush ought to get a plant of it next October, if not sooner. No doubt it is to be had in many of the Nurseries, but nine-tenths of the gardening world have no idea of such a fine thing being in the country at all. It was thought of so much interest at the meeting, that the plant had to be removed up to near the chairman, that all the ladies might see it under better light. There was also a *double-white-flowering peach* exhibited at the same time; a pretty thing enough in its way, and would have been thought a good deal of had it not been for this crimson variety. What a fine addition these will make for our early spring flowers, when they come to be large bushes, like the almonds, in our shrubberies! Ask every nurseryman you meet, or to whom you write, if he has *the double-crimson peach* on sale, and what is the price of it; thus a knowledge of the plant will soon spread abroad like wild fire. In the lecture on these new peaches it was said, that the Chinese have a whole collection of them, differing from each other by the colour of the flowers. I did not hear if the fruit is good to eat; but we had a dish of the finest *strawberries* I ever saw, with permission to taste them all round, and we all came to the same conclusion as our lecturer, that strawberry forcing could not be pushed any farther. It is really a luxury to be allowed to taste fruit, fresh from the country, in London. We owe this relish to Mr. M'Ewen, gardener to His Grace the Duke of Norfolk, at Arundel Castle. He did not tell the Society, however, the way he managed to have whole pots *with all the fruit in them ready for table at the same time*, and the thing being a complete secret among a few of our best gardeners, and as all of them know that I cannot keep a secret (I never could), they will not think me out of order here. In these days of high gardening, it is considered a point of the highest excellence to send fruit to table on the plants, and the strawberry not giving all the fruit ripe at the same time, they hit upon an excellent plan to force them to do so. When they are just going out of blossom, the young things are cut off, like thinning grapes, except so many to every stalk, and every one of this *so many* must be of uniform size, so that they have a good chance of ripening all at the same time. When they are full-swelled, they are looked over a second time, and if one appears to be too forward, or to lag behind, it is cut off also; then the whole must be ripe the same day; then the pots go to table; and if there is a gallant officer in the party, he is allowed to cut off the first stalk with five or six enormous large ripe strawberries on it, and hand it round to the ladies, after that, first come, first served, in the old way. Mr. M'Ewen sent us a lot of pots with fruit all in this condition, and an extra plateful of the finest fruit for the whole of us to taste, as I have just said, and we all wished him much success with the rest of his crops. The kinds he prefers for forcing are *Keen's Seedling* and *Alice Maud*. D. Beaton.

FIRM AND LOOSE POTTING.

Times change, and men and methods change with them. Every age has its peculiar characteristics, nay, every division of that age has its eccentricities, its cry, its vaunted discovery. What holds true in manners, science, and politics, is equally true in gardening. What wonders we should ere now have seen, if the results from working-out supposed new ideas had been at all proportionate to the pertinacity and magniloquence displayed in keeping them for a time before the public attention. How often has the new beacon light that was to guide to unheard of success proved but a very *Will-with-the-wisp*, that left us floundering in the morasses of disappointment. And, nevertheless, the raiser of that light might himself have reason for rejoicing in its radiance. His fault consisted not so much in advocating a certain mode, as in the forgetting, or overlooking, collateral circumstances, that were quite as essential to success as the one condition to which he gave such prominent notice. Besides, it must not be forgotten

that there is in human character ever a tendency to rush to extremes, so much so, that very often the disciple goes much farther than his teacher. This is partly owing to the antagonism that ever exists between old practices and new theories. Both may be alike successful, and yet the means employed be vastly dissimilar. Both may develop their principles to a culpable extreme, because this is always the tendency of party debate on any subject.

For instance, how different is the mode of forcing now generally adopted to that practised in our younger days. Then, whatever the weather, the night temperature must be high and regular; the day temperature kept as regular and low, by the admission of air in sunshine. Here the high temperature at night was neutralised by the air and low temperatures during the day. We now save trouble and expense by regulating temperature by light, at least as far as we can do so within the bounds of safety. The results may not be superior, but economy, and a more natural system may be claimed for the latter. Yet so liable are we to run to extremes, that we have seen crops, grown upon the old system, that were never perfected, because the high temperature in darkness had wasted the excitability of the plant; while in going to the other extreme, and allowing the temperature to be cooled unduly at night, the young fruit received such a chill, that they never swelled kindly afterwards. This may be conned over by those who have now vines beginning to start in their greenhouses.

Again, time was, when he was considered a notable potter who could most dexterously slice off the outside of the ball of a plant, and then stick the mutilated lump of roots into a pot, similar in size, at most not much larger than the pot whence it was pulled from. It is not our purpose here to show how ruinously this affected some plants, nor how even now it might at times be practised with others that make fresh roots freely. The horror of the system was carried to the opposite and, frequently, equally ruinous, extreme, of transferring balls of plants from one pot to another, without doing any thing to the roots at all, however laced and matted they might be. Again, most of us recollect how fine we used to sift our soil and compost for pot plants, and how regularly we used to drench the pots after potting; but then, any thing like a large shift was a more than a seven days wonder. With the time of large shifts came the supposed necessity for the soil being rough and porous, for the free admission of air and the free percolation of water. But no sooner did this fine idea get started, than, like a high spirited horse, it was galloped to the death of many a nice plant. Sifted soil was abjured, it is true; but then it was exchanged, in many instances, for stuffing and squeezing several large pieces into a single small pot, entailing upon the plant more than all the disadvantages such a plant could have experienced by being placed in common soil out of doors, and depriving it of all the advantages it would have realized when thus planted out. Proportioning the roughness and porosity of the material to the size of the pot, the size of the shift given, and the length of time the plants might be supposed to remain, were too trivial matters ever to be inquired about. Nor was this all: roughness and porosity of material came to be considered synonymous with looseness in potting; the rough soil was therefore merely trundled in; the watering, in course of time, rendered the compost more dense, taking fresh soil and the best roots along with it to the bottom of the pot; and, unless frequent top-dressings were resorted to, the top part of the old ball would be left sticking like a pillar in the middle of the pot, with little chance of ever having the fibres contained in it moistened, except by capillary attraction, or setting it over head in a tub of water. How natural, in such circumstances, to eschew the loose potting, and with either rough or fine soil to resort to the hammer or the mallet, as adverted to by a correspondent, to thump the material close and firm to the sides of the pot. Is such firm potting necessary? As a general principle we should say, no! just because, in most cases, to a certain extent, we wish to encourage growth before bloom.

In many cases, and especially in hard-wooded plants with fine hair-like roots, if we used the rough soil, and did not use the mallet, which we very seldom do, we should, nevertheless, press the materials as firmly together as possible, and this all the more, if we wished more for bloom than growth. In all hard-wooded plants, as a general rule, it may be stated that, provided the soil be rough and open, as recommended in these pages, it should be pressed firmly together. Instead of malleting, we should, unless in particular instances, prefer leaving the new soil at the sides higher than the surface of the old ball in the centre. Watering is thus secured to all the fibres. Before a man could expect success from thus malleting fine-sifted soil, and at the same time used large shifts in potting, he would require to be an adept at, and understand thoroughly, all the effects of the water-pail. One of the advantages of using moderately rough compost, rather firmly pressed together, with abundance of proper drainage, is, that the cultivator is rendered more independent of the waterer. The more hard the soil is, therefore, the more carefully must the water be given. In the first case, however put on, it will precolate freely through the mass, and the overabundance will escape. In the latter case, unless great care is used, there will always be a tendency to excess in one part, and a deficiency in the other; while the very hardness will bring the earth so much under hygrometric influences, that in a hot day the earth will shrink from the sides of the pot, and thus cause cracks to be formed, which would be strangers in a pot in which the soil was more moderately pressed. In soft-wooded plants, we do not press the soil nearly so much, because we wish growth to precede the flowering process; and in every case, where both growth and bloom are wanted, the result of our observation and practice leads us to recommend a medium of firmness in potting. In using compost rather rough, I always finish with a layer of finer on the surface, which thus prevents the air entering too freely, and thus causing the soil to dry too quickly.

Between *malleting* and *pressing*, I am aware there can be given no very well-defined idea of difference; and if the former was not done to excess, I do not see why it should not do as well as pressing, provided, in both cases, the soil was rough and porous, and neither wet nor dry. But we generally see enough of broken pots already; and once introduce the hammer and mallet, and I should dread the accumulations to the crockery heap.

These remarks are merely general. There are many exceptions. It would be easy to find confirmation and disproof too, in the separate provinces of our excellent coadjutors. For instance, there is a nice cabbage plant that we want to make the most of for the kitchen-table. We loosen the earth about its roots, and its appearance soon tells we had been doing right. Did we wish that plant to bloom as soon as possible, we should do no such thing. There is a pear tree, destined to be an ornament for landscape scenery. We give it width and depth of the best loam, and well turned and loosened. Here is another we wish to be a Lilliputian pyramid, clothed with bloom buds and fruit. We set him upon a hard mound, and do little more than cover his roots with soil. Nay, could we spare the space in the border now wanted for other things, we would, judging from analogy, carry the idea of *hardness* to such an extent, that we would waterproof a considerable space over the roots of

that tree with concrete, or tar, and could manage it with the latter at a tithe of the expense, as by the mode mentioned by an obliging correspondent for making walks. We mention these merely as corroborative of the fact, that firmness of the soil has something to do with fruitfulness, while it at the same time discourages growth. Of course, between a tree in the natural ground, with a hard waterproof covering about its roots, there is, in other respects, no analogy with a plant growing in a pot. The latter chiefly, or altogether, depends on you for its moisture. The former has got the circumference of our earth to depend upon, and so long as there is moisture in its neighbourhood it will obtain it. The whole subject requires thought and investigation. R. Fish.

P.S. I attribute great success with early-forced strawberries *partly* to the firmness of the soil in the last potting.

PROPAGATION OF ORCHIDS.

(*Continued from page* 36.)

Physurus.—A small genus of plants separated from *Anæctochilus*, and may be easily increased in the same way.

Renanthera.—There is only one species (*R. coccinea*) worth either growing or increasing. The way to propagate it is to take off a young branch below a root or two; place an upright branch in a pot, cover it with short green moss, and tie the shoot to it; keep it warm and moist and it will quickly grow, and, with good management, will flower in two or three years.

Saccolabium.—All growers of orchids are fully aware of the beauty of several species of this genus. They will always be comparatively rare, because they are of slow growth. No method has yet been discovered of propagating them, except by allowing young shoots to spring from the lower parts of an established plant till they (the young shoots) emit a root or two for themselves; as soon as that takes place the young shoots may be safely cut off below the root or roots. The safest way is then to fasten the shoot so cut off to a block of wood, being very careful not to injure the young and tender roots. Let the plant then be hung up to the rafters, if possible over a cistern of warm water, the moisture arising from which will greatly assist their growth. Shade them effectually from the sun, and syringe them frequently with tepid water. The roots will soon elongate, and then, when that is decidedly the case, they may be taken off the blocks and carefully placed in baskets proportioned to their size, filled with sphagnum moss not too lightly compressed; then hang them up in the warmest part of the house, keep them moderately moist, and in three years they will flower. From the first appearance of the young shoot till it flowers, probably seven years will elapse; it is this length of time that causes the price of these beautiful plants to range so high, and for that reason we have dwelt rather lengthily upon the mode of propagating them, for it would be almost a serious misfortune to lose a shoot that has taken so long a period to bring it into a fit state to be propagated.

T. Appleby.

(*To be continued.*)

FLORISTS' FLOWERS.

Polyanthus (*J. Kington*).—Your flower is very good. The proportions of the colours are in accordance with the best standard. Ground colour dark maroon; lacing very clearly defined. Of the habit of the plant we cannot speak, having only a truss of flowers.

ROSE CULTURE FOR EXHIBITION.

(*Continued from page* 36.)

Growing in Pots.—*Glazed Pit: Its form and advantages.*—Though if the cultivator has a house for cultivating his roses for exhibition, he may dispense with a pit, yet, if he has a pit in addition, he will find it an exceedingly useful adjunct; and now glass and bricks are much cheaper than they used to be, whoever wishes to grow roses in pots extensively, and to perfection, the additional outlay will not be considered useless nor extravagant. The two combined will multiply the chances of success tenfold. The best form for a cold pit is the common lean-to—that is, the walls (9-in.) should be highest at the back, and consequently lowest at the front. The front wall should rise out of the ground at least eighteen inches, and the back, three feet. Six feet would be a convenient width for the pit, which would give a rise to the lights of three inches to the foot, which rise would cause the rains to run off quickly, and would, in a great measure, prevent dripping upon the plants, which is always injurious, but more especially in winter. The length of this pit will depend, of course, upon the number of roses grown in it. The bottom of the pit should have a stratum of brick ends, or chippings of stones, with a layer of coal-ashes upon them. This will act as a drainage for the overplus water from the pots, and prevent the existence of worms under the plants. The walls would be all the better if they had a coating of whitewash at the first, to be renewed, at least, annually. It will close up any cracks or holes there may be in the wall, and thus prevent insects from lodging therein, or laying their eggs in such convenient nests. The copings of the walls should be of good sound deal; that on the front wall should be sloped off at the same angle as the lights, whilst that at the back should be bevilled off exactly from the centre to the back. This slope will throw off the wet clear from the walls—for remember these copings should project at least an inch beyond the walls all round the pit. The lights should just reach to the ridge formed by the bevil on the back wall. The rafters, to bear lights, should be moderately stout, and should have a bead fastened to them exactly in the centre, to keep the lights steady and in the place; when thrust up or down to examine the plants, water them, or any other manipulation necessary; and, lastly, the lights should be well glazed with a moderate-sized glass. We neither recommend large, long squares, nor yet small, narrow, short ones; six inches wide, by eight inches long, may be considered a useful medium size. Such a pit, so built, and so glazed, will be a substantial, lasting structure, and will, by keeping the glass repaired, and giving it two coats of paint every second year, last for a man's life-time; that is, for thirty or forty years. Though the first cost may be rather heavy, such a pit will in the end be the cheapest. We could never understand that there could be any economy in putting up cheap, rough, light structures in gardening, whether in the shape of houses or pits. Cheapness in such buildings only means "penny wise, and pound foolish," and can only be tolerated where the party cannot afford more substantial erections, or is old, and having no immediate heirs, think that for these reasons, the cheaper they can be erected the better it will be. These remarks, of course, are not intended to apply to our cottage readers and friends. We recommend to them, rather than have no pits at all, to put up their turf-pits, and other cheap shelters, for the simple reason that they can afford no better. And as far as they go, such shelters are exceedingly valuable to such persons.

To return to our rose pit. The advantages of such a structure are two-fold; they serve as a proper receptacle for newly-potted roses, and as a shelter, without undue

excitement, to the more tender Bourbon, China, and Tea-scented varieties, The roots of the rose are very impatient of excessive moisture, and if exposed to long continued rains after potting, a great portion of the small fibry roots are almost sure to decay. Now, if after potting, and a good watering to settle the earth of the roots, they are placed in a cold pit, syringed gently two or three times a week, and shaded from the sun, under such favourable treatment they will soon make fresh roots, and scarcely suffer from the removal. In such a case, the pit is invaluable as a shelter from drying cold winds, and from heavy rains, frost and snow. Again, this pit is of great use as a protection to the more tender kinds, not exactly from cold alone, but also from excessive heavy autumnal or winter rains. More of these kind of roses are destroyed by heavy rains than by any other cause. This has been proved repeatedly by experience. In the greenhouse they do not suffer from this cause; but then, again, the greenhouse is generally kept too warm for roses. In the pit there is no artificial heat, and if rightly managed, by giving abundance of air on all favourable occasions, by which is meant every fair day, though cold, and even in rainy weather, by tilting up the lights, the plants are kept in a state of quietude, which is very beneficial to them, and will, as it were, concentrate their energies whenever they may be wanted, whether to place in the house to be forced to bloom at any particular time, or allowed to bloom late in the pit. Another advantage of having such a pit at command, is, to retard the plants from coming into bloom too early. The seasons in this country vary so greatly, that the best cultivator may miscalculate the time his roses will be in bloom. For instance, in the house where they are forced for the purpose of being in bloom the first week in May, should there be a continuance of bright sunny days, some of the roses will, with every care as to lowering the temperature by shading, giving air, and lessening the amount of artificial heat, many of them will advance too quickly into bloom. In such a state, they will not bear exposure to the open air without manifest injury both to the foliage and bloom. What is to be done? If allowed to remain in the house, they will be out of flower by the day of exhibition. In such a case, the pit presents itself as a sure medium in which they may be kept back without injury, and then the rest that are left in the house can have the usual treatment to bring them forward to the very day and hour. For all these reasons a pit is desirable, and useful to the grower of roses in pots for exhibition. In our next, we shall give a selection of the best kinds suitable for this purpose. T. Appleby.

RIDGE CUCUMBERS: WHAT TO AVOID IN THEIR CULTURE, AND WHAT TO ADOPT.

The many failures we have seen in Ridge Cucumbers, even when under the management of gardeners of undisputed ability, has led us to believe that there is often something radically wrong in the treatment they get; and not the least of such evils is the plan of elevating them on a mound of heating material, in such a way as to be exposed to every current of air, without, on the other hand, deriving that beneficial influence from the surrounding ground they would do were they on a level with it. The common practice is this—A long ridge is formed of such spare heating materials as come to hand, very often short, new-mown grass is the principal thing; this ridge, if formed in a trench at all, is supposed not to be right unless it be elevated considerably above the ground level, and is then covered with earth, and the plants and hand-lights at once introduced, and, for a time, things seem to go on pretty well; but by-and-by, when the plants are supposed to be sufficiently strong to dispense with the hand-lights, it is discovered that their progress is arrested, and the anxious cultivator, seeing they do not go on "a right," sets about and builds a sort of low turf parapet along each side of the ridge, and the same at the ends, making a sort of shallow trough to retain the water he thinks it is necessary to give them; still their produce is far from satisfactory, and, at the end of the season, he has the mortification to acknowledge that his ridge cucumbers have not been good at all this season. Now, we have no hesitation in saying, that a heap of raw fermenting material, like fresh-mown grass, is one of the worst substances anything can be planted upon; true, it gives out a certain amount of heat (sometimes violent), which, by warming the earth, may give an impulse for a time to the plants then growing upon it, but as soon as that earth becomes appropriated to the uses of the plant, where are its roots to travel for more food; assuredly no one will say that mouldy, fusty matter, such as short grass is after being heated, is at all a likely food for anything but the fungus; and we have no doubt its repulsive character is the sole cause of ridge cucumbers and other things doing so badly on it. Although the cucumber does not root so deeply as some plants, yet we are of opinion that they, as well as many other shallow-rooted things, derive a considerable benefit from the good quality of the soil below them, and assuredly no one can expect a mass of matter, like mouldy hay, to contain any of those fertilizing qualities so necessary to the welfare of plants; in such a repulsive medium, we look in vain for the roots of the most robust plants to penetrate,—even weeds avoid its offensive presence; and we have no hesitation in saying that, independent of its inutility as a fertilizer in the condition above described, it excercises the baneful influence of preventing the plants withdrawing from the ground those genial substances which the latter is so willing to part with when heated with the midsummer sun; so that instead of having a depth of soil proportionate to the wants of the plant, it is, to all intents and purposes, shut up as in a shallow box, with a substratum poisonous to all except the lowest class of vegetation. We therefore strongly advise the young gardener and amateur not to plant their ridge cucumbers on such a place, but rather select some warm sunny border; and if the soil be not already rich, light, and good, remove what is there, and substitute fresh; and if there be any doubts of the place not being sufficiently dry, let some substratum, in the shape of drainage, be introduced, but be careful of *raw* substances as heating material.

Ridge cucumbers delight in a rich open soil, though not too much so, otherwise they become gross rather than prolific. The best crop we ever saw was growing in a sort of trench about six feet wide, with banks all around, and in a compost of which maiden loam formed the principal part. We need hardly advise the amateur to take care and harden off his plants before they be turned out, but we deem it right to say, that if he wants them to produce fruit early, he must not omit giving them "a larger shift" while in the preparatory process, in order that the plants may be as strong and robust as possible when planted, which, as we have recommended to be done on a sunny border, without any other than solar heat, ought not to be before the 1st of May, unless under special circumstances, and certainly the present season seems likely to be one of these. Hand-lights will, of course, be wanted, but later on a few boughs stuck round do very well. *Vegetable-marrows*, the treatment of which somewhat resembles ridge cucumbers, may be planted out sooner, usually the middle of April, when hand-lights are to spare, only they must have more room, and as they advance, they require a good deal of thinning, in which it is better to pull up a few of the plants as soon as you see the others fairly established, as too

many plants left on the ground induces the mildew to attack them before it ought to do so, and this is not easily checked in its ravages. Ridge cucumbers, though equally liable to it, are less likely to overrun each other, and if at planting out an area of some sixteen or twenty square feet be allowed to each hill or plant, there will be little occasion to remove any entirely; but careful thinning late in the season is of some use in prolonging it, as well as spreading out and pegging down in the early part of it; but we will in due time return to this subject. J. Robson.

NEWCASTLE, NORTHUMBERLAND, AND DURHAM SOCIETY'S POULTRY SHOW.

This exhibition, after suspension for a year or two, was held in the Corn Exchange at Newcastle-upon-Tyne, on the 13th inst., under the patronage of the mayor, James Hodgson, Esq., and the sheriff, I. L. Bell, Esq. We are glad to find that its enterprising secretary, Mr. Trotter, not only made the most entries (13), but had awarded to these 7 first prizes and 3 second. The committee, having only been formed a few weeks, did not expect so large an entry as 160 lots. They shewed to much advantage in three rows of roomy pens.

The *Cochin China fowls* were a creditable lot, taking into account that "poultry fancying" has not made much progress northwards. The first prize birds were bred from Mr. Simpson's famous prize hen, and, being only hatched in August, were not unworthy of their parent. The second were from Mr. Punchard's stock, and hatched in July; one of the *pullets* is a very good specimen. The first prize for cock and one hen was awarded to a very nice pair. The cock, bred by Mr. Sturgeon, obtained a head prize at Birmingham in 1850. *The Spanish*, as a lot, were very inferior, being deficient in plumage, as well as in the appearance of purity. The first prize birds, although not up to that standard of excellence which would satisfy a judge, yet they may be said to be beyond the average of what amateurs call good Spanish. *The Dorkings* were pretty good; the first prize birds were bred by Lord Hill, the fame of whose fowls of this breed is such, that it is unnecessary to allude here to their superiority; but in consequence of having been "bred in and in" they are not large. Dr. Davison exhibited a very good pen of one cock and five hens of this breed, and which were purchased by Mr. Nate.

The Malays were so inferior as not to be thought deserving of a prize. *The Game fowl* did not muster well, taking into consideration how celebrated this district is for this breed; but this may be attributable to the disgusting and low following of "cock-fighting," which still is suffered to be practised in Newcastle, to its disgrace. The "cock-pit" having been open last week, many birds of "surpassing beauty" were sent in, which would have been an ornament in this day's exhibition. *The Polish* were very poor indeed; and in answer to our criticisms, or rather suggestions, in our impression of the 8th instant, we are informed this breed is very little cultivated in Northumberland, and the committee did not deem it necessary to offer prizes for the different varieties of Polish. Amongst *the Dutch fowls* there were some excellent specimens; these fowls, from being so prettily marked, and being abundant producers of eggs, are becoming great favourites. *The Bantams* were a decidedly inferior lot, and would not bear out that beautiful description given of them by Sir John Seabright. The *ducks* were an exceedingly good lot; those of the Rouen variety, to which was awarded the first prize, were greatly and justly admired. The Aylesbury were also good. *The geese* were not superior. *The turkeys* were more admired: the cock, to which was awarded the first prize, was an excellent specimen of that noble and valuable bird in its native forests. On a whole, the superiority of this day's exhibition over that of former years was so manifest as to be observable to the most careless observer. The band of the 28th regiment was in attendance, the excellent performance of which was much applauded. The attendance was highly respectable, and, taking into consideration that the spring meeting of the Newcastle Racing Club was held this day, as well as other highly attractive amusements, was numerous.

The committee had it in contemplation to keep the exhibition open to nine o'clock, in anticipation of having a large attendance in the evening, which would undoubtedly have been the case; but as it would have put many of the exhibitors to inconvenience, the exhibition was closed early, in order to allow the fowls to be sent off by the evening trains.

Although not to be compared to the Yorkshire Society's show at Halifax, either in number or quality, this exhibition was such as we hope will satisfy the promoters of it, and the members of the Society, that by a little exertion they may in future years produce a show of poultry second to those of few local associations, and which will at once fulfil their object, in improving the different breeds of fowls in their neighbourhood.

In reply to the remarks made by our correspondent, under the head "Gossip," that one day is too short a time, it is said that one day is sufficiently long enough for valuable fowls to be caged up, and that many exhibitors complain of the injurious effects arising in consequence of their birds being so long detained at some of the leading exhibitions. Our correspondent also asked "if the names of the judges were purposely withheld from the public," and the reply is in the affirmative, for the purpose of preventing "suspicion." Although the names of Messrs. Nate, Bond, and Heaton, are sufficient to guarantee any honourable person that nothing could possibly be wrong in this way, yet in all societies of this kind it is highly desirable that the proceedings should be such as to be "above suspicion."

The following is a list of the prizes awarded:—

	Price per Lot. £	s.	d.
COCHIN-CHINA.—Cock and Two Hens.			
1. Mr. T. A. H. Dodd, Woodhouse, Ryton, imported 1851	6	6	0
2. Mrs. W. Trotter, Healey Mill, Hexham, hatched June 27, 1851—cockeril 2*l.* 2*s.*, pullets 3*l.* 3*s.* each	8	8	0
COCHIN-CHINA.—Cock and One Hen.			
1. J. H. Travis, Esq., York,—cock hatched May, 1850, hen February, 1851	105	0	0
2. Mr. J. H. Smith, Skelton Grange, York	10	0	0
SPANISH.—Cock and Two Hens.			
1. Mrs. W. Trotter, Healey Mill, hatched 1850	10	10	0
2. Mrs. Hindhaugh, Pensher House	1	10	0
DORKING.—Cock and Two Hens.			
1. Mrs. W. Trotter, Healey Mill, Hexham	5	5	0
2. Mrs. W. Tweddell, hatched 1850	5	0	0
DORKING.—Cock and One Hen.			
1. Dr. Davison, Seaton Delaval	2	2	0
GAME FOWL.—Cock and Two Hens.			
1. Mr. John Charlton, Simpson-street, Newcastle, 3 years	2	0	0
2. Mr. John Charlton, Simpson-street, Newcastle, 9 months old	2	0	0
GOLD PENCILLED HAMBURGH.—Cock and Two Hens.			
1. Mr. George Lowe, Smithfield, Birmingham	1	10	0
2. Mrs. W. Trotter, Healey Mill	3	0	0
SILVER PENCILLED HAMBURGH.—Cock and Two Hens.			
1. Mr. G. Forster, Slaley, Hexham, hatched 1851 (June)	1	10	0
2. Mr. Ralph Blackburn, Slaley, Hexham,—cock hatched 1850, hens, June, 1851	1	10	0
POLAND.—Cock and Two Hens.			
2. Mr. James Jones (Black Polish)	1	10	0
ANY OTHER VARIETY.—Cock and Two Hens.			
1. Mrs. Robinson, Grey Mare Hill, Riding Mill (Sussex)	2	0	0
2. Mr. John Dinning, Adderston, 2 years	5	0	0
BANTAMS.—Cock and Two Hens.			
2. Richard Adams, Esq., Selby (Gold Laced)	10	0	0
2. John Grey, Esq., Garesfield, Gateshead (Gold Laced)	21	0	0
2. Mr. Geo. Hall, Blaydon, Newcastle (Gold Laced)	1	0	0
2. Mr. Matthew Swanston, Jesmond (White)	2	2	0
ANY BREED.—Cock and Five Hens.			
1. Dr. Davison, Seaton Delaval (Dorking)	10	0	0
2. Mrs. W. Tweddle (Dorking)	5	0	0
PIGEONS.			
1. Mr. T. S. Wilson, Newcastle, carriers, 2 years	1	0	0
GEESE.			
1. Mrs. W. Trotter, Healey Mill	1	0	0
2. Miss Tweddell, Whickham (Hong Kong, or red-legged Chinese)	2	0	0
DUCKS.—AYLESBURY.			
1. Mrs. Gibson, Derwent Villa, Newcastle, 2 years old	50	0	0
2. J. S. Challoner, Esq., Newcastle, 11 months	3	0	0
DUCKS.—ROUEN.			
1. Mr. Thomas Reid, Leazes, Newcastle, hatched 1850			
2. Mrs. Gibson, Derwent Villa, Newcastle	25	0	0
MUSCOVY.—Drake and One Duck.			
1. Mr. Stable, Newcastle	20	0	0
TURKEYS.—Cock and Hen.			
1. Mrs. W. Trotter, Healey Mill, Hexham (Norfolk)	5	0	0
TURKEY COCK.			
1. Mrs. W. Trotter, Healey Mill, Hexham (American), hatched 1851	5	0	0
2. Mrs. Robinson, Great Mare Hill, Riding Mill, hatched 1850	1	0	0
2. H. Marshall, Esq., Durham, hatched July, 1850	3	0	0
GUINEA FOWL.			
1. Mr. Joseph Laycock	1	1	0
PEA FOWL.			
1. Mr. John Dinning, Adderston	10	0	0

KING'S OR CORY'S SAFETY HIVE.

I have never seen any notice taken in The Cottage Gardener of a hive which I have adopted, and which I mean to use exclusively. It is here called *Cory's Hive*, but invented, I believe, by Mr. King, of Littlebury, near Saffron Walden.

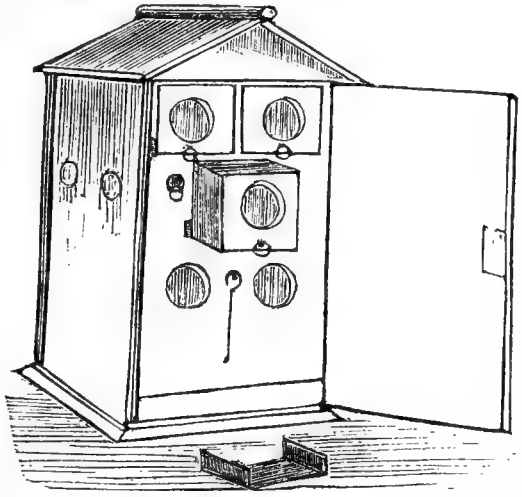
For the information of my brother bee-keepers, I send you one of Mr. Cory's descriptive papers, with his address, and also an account of the produce of a hive, stocked 1850.

May 22nd, 1851, bees let into drawer No. 1. June 2nd, moved drawer—but suppose too late—as they swarmed June 3rd, and seemed to forsake the drawers until the 5th, when they were very busy. June 11th, they threw off a strong cast, but notwithstanding this great drain upon their numbers, I obtained upwards of 20 lbs. of the purest honey, without the loss of a single bee.

The swarm of June 3rd was admitted into drawer No. 1. June 18th, moved on 22nd and 24th, and produced 15 lbs. of virgin honey. Thus I have obtained 35 lbs. of honey, and two additional stocks, from the parent hive.

I have several more of the same description, but send you the most favourable account. I ought to add, that Mr. King has this year produced some improvement upon this plan, which is, I believe, registered, but not having seen it in work, I am unable to speak to its superiority.—A Country Rector.

(Messrs. Cory and Son, Trumpington-street, Cambridge, have obliged us with the following woodcut, and particulars of this hive:—



"This hive is so constructed as to protect the bees from the severity of the weather, the sides, back, and front, being hollow. It may be stocked in the same manner as the straw hive. By observing the bees through the glass windows, it may be ascertained when the hive is nearly full. Before it becomes too much crowded, pull out the slides to admit the bees to the drawer in the middle of the hive; and as soon as this is about half full of bees and comb, put in the slides again, and pull out the drawer about three inches. Then place the protector under it, and continue to pull out the drawer, keeping the protector close to the hive, and close to the bottom of the drawer, till the openings in the sides of the drawer are safe within the compass of the protector: by so doing, not a single bee will escape to cause any annoyance. When this is done, take out one of the top drawers and place it in the middle, where you took the other from; then put the one containing the bees at the top, keeping the protector close to the hive while putting it in, taking care now to draw the slides belonging to both. The bees will not begin in the top drawers as soon as in the middle one; but having once begun their work, they will carry it on, and begin in the middle again directly. When this is about half full, it may be removed as before. When a drawer is full, the same process is to be followed as in removing the other drawers:—it is to be carried to a distance, and after letting them remain fifteen or twenty minutes, tap the sides of the drawers with the handle of a knife or a small stick a few minutes, and then let the bees escape. You will have honey of the purest kind: the combs can be cut from the top of the drawer by passing a knife along the small opening left for that purpose on one side of the drawer.")

MANGOLD WURTZEL AND CARROTS IN ALTERNATE ROWS.

As the subject of mixed cropping has been brought under the notice of the readers of The Cottage Gardener, I beg to refer them to a paper on the above subject in part 2, vol. xii., of the Journal of the Royal Agricultural Society, for a detail of the successful experiment of growing mangold wurtzel and carrots in alternate rows, as tried by Mr. Thompson, steward of the Duke of Beaufort; and, on his recommendation, by Mr. Pusey. Each grew a greater weight of mangold per acre on the alternate plan than in continuous rows, and had, in addition, a fine crop of carrots, Mr. Pusey's weighing eight tons per acre. He remarks:—"It is certainly a most ingenious contrivance thus to intermix two plants: one with broad leaves that draw, it would seem, much nourishment from the air, the other burrowing deep in the soil for food. It realizes curiously the singular Greek proverb, that 'the half is more than the whole;' and may be described shortly as a method of not only improving the mangold crop, but of getting eight tons of carrots for nothing." I am trying the experiment on an acre of ground, and will, if you wish, give you the result at the proper time. J. A. Briggs.

[We shall be much obliged by the communication.—Ed. C. G.]

TO CORRESPONDENTS.

Verbenas and Geraniums (*J. S.*).—These will not thrive well in a clayey soil. You should procure some light loam and vegetable mould, mix them together, and put a good shovel full in with each plant at the time of planting. You ask for the names of six of each, suitable for your clayey soil; there are none suitable, but with the above preparation the following will do tolerably well. Verbenas: *Defiance*, scarlet; *Emperor of China*, crimson; *Purple Prince*, purple; *St. Margaret*, salmon; *White Perfection*, white; *Mrs. Mills*, blue. Geraniums: *Tom Thumb*; *Lucia rosea*; *Unique*; *Lady Flora Hastings*; *Mangle's silver-edged*; *Compacta*, or *Dropmore*.

Distances for Transplanting Annuals (*A New Subscriber*).—Put *Sanvitalia procumbens*, six inches apart every way; *Eschscholtzia*, nine inches; *Erysimum perofskianum*, six inches; *Lobelia gracilis*, six inches; *Lobelia ramosa*, three inches; *Convolvulus minor*, ten inches; mixed *Clarkia*, four inches; *Saponaria calabrica*, nine inches. The *Erysimum* cannot be trained so low as six or eight inches; with perseverance you might keep it to a foot, or rather more. The *Groundsel* will not do at all, with any of the *Clarkias*. See that you have mixed only the white and purple Clarkia, no other Clarkia is worth growing in flower-beds.

Pullet not Laying (*M. A.*).—Your pullet that repairs to the nest daily without laying should be well watched; she may be in the habit of dropping soft eggs. If so, she should have lime-rubbish and oyster-shells broken up, with generous feeding. If she appears to be too fat, she might have an aperient; if too poor, meat and other stimulants. Food given warm every morning will urge a sluggish layer, but we have never found this treatment necessary with Cochin-China fowls. If she is a good pullet, do not give her up, but rather report progress again.—*Anster Bonn.*

Coronilla glauca not Flowering (*Eliza*).—You have indulged the young plants too much. The drainage and the roots being all right, you need not be afraid of what the cold winds have done to some of the tops—that often happens. We have seen this plant cast many of its best leaves without any apparent cause. Confine them at the roots this season—that is, do not pot them till July, and then only to one size larger; but allow them plenty of water; that will cause them to bloom freely all next winter, or early in the spring.

Diseased Cucumber Vines (*A Young Beginner*).—Your cucumbers have evidently suffered by air not being admitted in time; the plants being shut up in a close, hot atmosphere, perspired too much—hence the yeasty-looking matter you complain of, as covering them. Keeping rather close, and partial shading for a few days, will generally bring them round, but if your disease arise from other causes than the above, there is reason to fear it is the one which proved so fatal in some places two or three years ago. A transparent glutinous substance exudes from the fruit in such quantities as to render it quite unfit for use. Caustic matter, as lime, soot, &c., used rather freely in the compost they grew in, seemed the only thing to check it. If your plants be so affected, pray write to us again.

Striking Scarlet Geranium Cuttings for early Summer Blooming (*Y. Y.*).—You are too late now. By inserting them now they will bloom at the *end* of summer, but they will have too much disposition to produce leaves if planted out. Kept in pots during the summer, or lifted in autumn, they will make fine early plants for next summer, and bloom better, as well as be larger plants, than those struck out-of-doors in July and August. You may give them a very slight bottom-heat as you can afford it, but they would do well in a cold frame in this hot weather, but we cannot depend on such continuous sun. Let the cut ends dry some hours before inserting them in moistish soil, and sprinkle the foliage in preference to watering the soil for a fortnight or three weeks to come.

Bulbs done Flowering (*Hyacinthus*).—The only way to secure future usefulness from them is to take as much care of the foliage as you have done of the flowers. The leaves must receive no check until they wither, either from dryness or cold, &c. The matter will shortly be more

fully adverted to. Do not remove the *chicken* bulbs (offsets) until the ripening of the foliage is perfected.

Drooping Pullet (*R. H. P.*).—Your Cochin China pullet shows symptoms of roup in an early stage. Give her, every morning, a dessert spoonful of cod-liver oil. Keep her as much as possible out of the cold wind.

Bees Robbing Hives (*R. S. Mountjoy*).—In all probability your pillaged hives were rich in honey, but thinly populated, and those in your apiary that were the reverse attacked them. You will find by this time, that what few bees there were left have forsaken them.

Bees in old Hive (*J. B.*).—Allow your bees to swarm. You will see what is said upon this subject in the next "Apiarian's Calendar."

Cochin-China Fowls' Eggs (*Ibid*).—These are not quite so large as those laid by common fowls; the colour of the egg is generally a pale chocolate, or cream colour, but some are nearly white.

Angelica Preserving (*V—, Somerset*).—In April, boil the fresh stalks in water until tender; scrape off the outside, then put them into a strong syrup of loaf-sugar, boiling hot; let them remain in it until cold, and then take them out and dry them.

Sussex Zinc Churn.—*R. C. W.* wishes to know where that recommended by L. I. P. can be purchased.

Carnations, &c. (*Violetta*).—There is no distinct work worth buying. See the directions given in *The Cottage Gardeners' Dictionary*.

Asparagus Shoots Injured (*J. K.*).—The "little holes" must have been caused by slugs. Give the beds a good dressing with salt once a-week.

Tobacco-water (*Picciola*).—To make this, pour half-a-gallon of boiling water upon one ounce of shag tobacco; let it remain until cold, and then strain it.

Rookery.—Will some of our readers oblige us by stating their experience in answer to this query—"Is it a good practice to kill a portion of the young rooks yearly? I have a rookery containing 80 or 90 nests; no gun has been pointed at them for four or five years. They have visibly decreased in numbers, and some of my friends attribute this decrease to the absence of the smell of gunpowder, but I must confess that most of these have a keen relish for a shot. A pair of rooks have taken a curious fancy into their heads, having built their nest between three chimney-pots, and they are now rearing their young ones, their cries being distinctly heard in the room to which one of the chimnies belongs; there are abundance of large trees within 100 yards of my house, many of them towering over it."—J. H. B. S.

Economical Boiler.—*An Old Subscriber* begs to inform several enquirers, that the boiler was obtained from Messrs. Singleton and Tennant, of Leeds. The £1 16s. 6d. did not include fitting the cover or lid on. See other parts of our paper to-day, as to the treatment of *hyacinths* done blooming.

Sugar Beer (*A Country Subscriber*).—The bung-hole at the top of the barrel need not be larger than that on the side, and may be less if desirable. There is no magic in the diameter. The beer may be bottled as soon as it is clear. The slides you allude to may be arranged either with broad-headed nails or screws.

Box-edging (*J. L. C.*).—This planted last month should be watered twice a week until rain occurs.

Advertisement (*B. G.*).—If you directed your note as in that to us, "J. H. Knight, Sussex," no wonder it has not reached its destination. The direction is "Mr. J. H. Knight, Florist, *Battle*, Sussex." We are not at all responsible for the statements in advertisements.

Orage Orange (*W. S. P.*).—Can any of our readers inform us what hedge plant is known by this name?

Joslin's St. Albans Grape.—A gardener, and good authority, writes as follows:—"A correspondent having enquired after this grape, I beg to say that I have several vines of it, but am cutting them away as fast as I can get others to replace them. A more worthless grape does not exist; at least it has proved itself so with me. Its qualities and defects may be summed up thus:—As a vine it thrives well, is very prolific, and the fruit, when properly ripe, of good flavour, having that peculiar musky taste peculiar to the *Grisly Frontignan*; but these are all its good properties, while, on the other hand, its bunches, though long, are exceeding thin; and it does not set very well, and, worst of all, as soon as it begins to ripen, it begins simultaneously to decay. No apricot, in an unfavourable season, is worse in that respect. The berries crack or burst at the end just as if an incision was made by drawing a sharp knife across them, and of course decay follows. This evil proceeds so rapidly, that in a short time only the skeleton of the bunch is left. Now, this is a sad fault in a grape that was sent out as one suited for late purposes, as with me it is quite useless long before the Hamburgh's, and other kinds it is growing with. Perhaps I ought to say, I have only grown it in a late vinery, but then that was just the place it was said to be adapted for; but for which it has in several cases, as well as mine, been proved to be utterly worthless."

Morels.—J. K. T., whose address we have, would gladly send W. M., of Niton, postage stamps for a few of these, to ascertain if they grow in his neighbourhood.

Names of Plants (*A Young Gardener*).—1. *Othonna pinnata*. 2. *Phlox reptans*, variety *crassifolia*, is sometimes called *verna*. 3. *Saxifraga hirta*. 4. *Aubrietia deltoidea*. 5. Is a species of spindle tree, *Euonymus*, but uncertain which. We cannot assist you in the name of the plant from the leaf alone—send us a specimen when in bloom. *Euphorbia jacquiniæflora*, is *E. fulgens* in *The Cottage Gardeners' Dictionary*.

Deodar Cedars (*J. C. W., Paris*).—We do not know of any one who has trees of this cedar to sell, of the size you name (ten feet high). Messrs. Knight and Perry, King's Road, Chelsea, have very handsome plants of it four feet high, in pots. They are half-a-guinea each.

Deformed Anemone (*Rev. J. F. G.*).—The bloom of the anemone you sent is an example of morphology. The floral leaves are partly changed into real leaves. Except as an object of curiosity, it is not worth keeping, there are such numbers of beautiful varieties that always come true, that it is not worth while to encumber the garden with such a poor variety. Some of the floral leaves or petals are partially variegated, which is a rather uncommon feature. We would advise you to save the seed from it this year; sow it next spring, and let the seedlings flower: you might, perhaps, obtain a double clearly-striped variety, which would be curious and novel, perhaps beautiful. Should you act upon this hint, we should be glad to know the result.

Calceolarias and Cinerarias (*Lora*).—The following have been raised within 1851-2. They are chiefly shrubby, show varieties, averaging from 5s. to 10s. 6d. each. Calceolarias.—*Holmes's Lear, Goneril, Timon, Flavius. Major's Conqueror, Glory, Cupid, Delight, Nobleman, Conqueror.* Cinerarias.—*Henderson's Mr. Sidney Herbert, Marianne, Mrs. Sidney Herbert, Mrs. Charles Kean, Prima Donna, Rosy Morn. Ayres's Magnum bonum, Iago, Gustavus, Orpheus, Unique. Overy's Hammersmith Beauty.*

Gardenia Stanleyana Shedding its Buds (*Eothen*).—No plant will drop its flower-buds if its roots are healthy, heat proper, and water applied rightly. In some one or other of these points of culture you have failed. Your *Gardenia Stanleyana* is a native of a hot climate, and requires great heat to bring the flowers to perfection. Examine the roots; if they are decaying, which we strongly suspect, you must repot the plant into a rich, light compost; plunge or place it where it can have bottom-heat, and a top heat of 70° to 80°. It will then recover health and vigour, and will probably flower next year. If the roots are sound and active, your heat is too low, or you keep the soil too wet.

Hardy Aquatics (*Sagittaria*).—*Aponogeton distachyon* (floating); *Butomus umbellatus; Caltha palustris; Hottonia palustris* (floating); *Menyanthes trifolia; Nuphar advena* (floating); *N. lutea* (floating); *Nymphæa alba* (floating); *N. odorata* (floating); *Calla æthiopica; Sagittaria latifolia; Stratiotes aloides* (floating *in* the water, not on it; *Villarsia nymphoides*. There are some others, but they are mere water weeds.

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Advertisements.

WEEKLY CALENDAR.

M D	W D	APRIL 29—MAY 5, 1852.	Weather near London in 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
29	Th	Large Tortoiseshell Butterfly seen.	29.675 — 29.601	53—28	S.W.	11	37 a. 4	18 a. 7	3 6	10	2 49	120
30	F	Dragon-Fly seen.	29.643 — 29.601	55—29	N.W.	04	35	19	3 32	11	2 57	121
1	S	St. Ph. & St. Jas. Pr. Ar. b. 1850.	29.760 — 29.672	58—32	S.W.	—	33	21	3 54	12	3 5	122
2	Sun	3 Sunday after Easter.	29.835 — 29.659	57—29	N.	—	31	22	4 16	13	3 12	123
3	M	Honeysuckle flowers.	29.826 — 29.732	54—32	N.W.	09	29	24	rises.	☺	3 19	124
4	Tu	Toothwort flowers.	29.702 — 29.665	50—30	N.	02	28	26	8 a 22	15	3 25	125
5	W	Mealy Tree flowers.	29.709 — 29.677	54—38	N.	02	26	27	9 44	16	3 30	126

Meteorology of the Week.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 63.2° and 41.8° respectively. The greatest heat, 80°, occurred on the 29th in 1841; and the lowest cold, 27° on the 29th in 1836. During the period 105 days were fine, and on 70 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

THALICTRUM. MEADOW-RUE or RUE-WEED.

(*Continued from page* 29.)

Thalictrum majus: Greater Meadow Rue.

Description.—*Root* perennial, very yellow, throwing up one or two stems every year. *Stems* crooked, two or three feet high, cylindrical, scored, purplish green, leafy, panicled. *Branches* several from the same point, of different lengths. *Leaflets* small, egg-shaped or roundish, two or three-cleft towards the end; rather milky-green above, quite so underneath. *Flowers* sweet, drooping. *Petals* four, purplish green. *Stamens* fifteen to twenty. *Anthers* yellow. *Pistils* four to seven. *Seeds* spear-shaped, furrowed, acute. Distinguished from *T. minus* by its always sending out two or three branches from the same knot on the stem or larger branches, and by the leaflets being dark green above and glaucous underneath; whilst in *T. minus* the branches rise singly, and the leaflets are of a lighter green above. This plant is also much more branched, and one-third taller.

Time of flowering.—June and July.

Places where found.—On bushy hills. More common in the north than in the south.

History.—We think that in *Lyte's Herbal*, page 42, this species is mentioned as the third kind of "*Thalictrum magnum*, or Great Bastard Rewbarbe," described as having "his small flowers of a light blue colour," of which colour they have been seen in our *Thalictrum majus*.

Thalictrum flavum: Yellow-rooted, or Common Rue-weed.

Description.—It is a perennial. *Root* fibrous, yellow. *Petals* four, cream-coloured. *Stamens* twenty-four; anthers yellow and erect. *Pistils* ten to sixteen. *Leaves* alternate, doubly pinnate. *Leaflets*, the *lower* irregular, sometimes wedge-shaped, with three clefts; or oval, entire, with a lobe on one side; the *upper* spear-head-shaped, entire, or with three clefts, all smooth, veiny, grassy green on upper surface, paler underneath. *Stems* leafy, three feet high, upright, hollow, angular, little branched, panicled at the head, with very numerous flowers. *Stigmas* heart-shaped, short. *Seeds* few, furrowed. Var. 1, lobes of the leaves narrower, and more wrinkled.

Time of flowering.—June and July.

Places where found.—Common in moist meadows, and on the banks of ditches and rivers.

History.—The absurd name of Rue, which it resembles neither in appearance nor in quality, seems to have been first applied to this plant by those who should have been wiser; for Lyte, who wrote in 1578, says, "In certain apothecaries' shops they call this kind of herb *Piganum*, and do erroneously use it for Rue, which is called in Greek *Peganon*." "The common sort," he adds, "call it *Rhabarbarum*, and therefore it is called *False* or *Bastard Rhubarb*." A plaister made of the bruised leaves raises a slight blister, and has been found useful in lumbago and rheumatism. The root dyes wool yellow, and in Buckinghamshire the villagers boil the root and young tops in ale, and drink the liquor thus made as a purging medicine. Cows, horses, goats, and sheep eat it, but swine reject it.

Foremost of an array of publications requiring our notice, is Mr. Scoffern's *Treatise on Sugar and Sugar Apparatus*, a little pamphlet deserving perusal by every one taking an interest in the details of our manufactures, but more especially by those who are endeavouring to establish manufactories of beet-root sugar in Ireland, and elsewhere. Of the samples of beet-root sugar exhibited in the Crystal Palace, Mr. Scoffern thus speaks:—

"Of the beet-root sugar samples present from Germany and northern Europe, the best appear to us to be those of the Zollverein. The Austrian samples of beet-root sugar present a difficulty which we cannot solve. With the object of showing the perfection to which drainage has been carried, we have presented to us the tips of certain sugar-loafs completely white, or, more technically speaking, 'neat.' This result, if occurring in the actual course of manufacture, and after the ordinary amount of liquoring, is expressive of a highly-successful condition of the sugar-making art. If, on the contrary, these tips are merely the product of forced efforts, they merit no approbation. We make this remark, because, on examining the unbroken Austrian loaves, their tips are found to be in a very different condition from the others.

"The French beet-root sugars are unquestionably the finest examples in the Exhibition of sugar, from whatever source prepared. We never remember seeing more brilliancy of colour than exists in the loaves of Messrs. Jeanti, Prevost, and Co. Nearly as satisfactory, but not quite, are the productions of Messrs. Serret, Hamoir, and Co., of Valenciennes. It may be remarked of both these manufacturers, that their goods are neat to the tip, and must have stood high in the moulds. A sugar refiner will easily know how to appreciate these conditions.

"Unfortunately, the Belgian loaves of Messrs. Claus and Caron got soiled during their transit, and hence a great deal of their natural brilliancy is lost. Any one acquainted with

the nature of refined sugars will, however, easily recognise in them certain first-rate qualities; they are neat to the tip, and were not low in the mould. If the samples of refined beet-root sugar forwarded by Russia are to be considered as a fair representative of the advancement to which the operation has attained, we must pronounce that country far in the rear of all competing nations."

The next work demanding our commendation, is *The Farmers' and Cottagers' Guide*, by Alexander Campbell. It should have been added, "*in the cultivation of their crops*," for its contents are confined to this subject. The preface assures the reader that the work is "perfectly simple and practical," and we add our testimony, that it is not only deserving of that character, but that the practices recommended, are, for the most part, good and trustworthy. There are some of its doctrines, however, against which we would warn our readers most emphatically, and the first is, that "potatoes sown in March will, in all probability, escape the fatal consequences of the disease." Now we, on the contrary, say that he who postpones planting potatoes until March, runs only just less risk of having them diseased than he who postpones planting them until April, and if he does not plant them until April, we know that he runs every chance of having them fatally affected. We invariably plant potatoes in *November*, and the disease is now eradicated from among them. When they cannot be planted in that month, let the potatoes be kept in alternate layers with dry earth or coal-ashes, in a cold shed, and be planted early in February.

Another practice we would condemn, is treading in the seeds of carrots and parsnips, instead of drawing the earth over them in the drills by means of the broad hoe. The lighter the soil lies over the seed the better, and if the broad hoe is used, there is no need of the double trouble and waste of time of going over the beds a second time "to rake the surface fine"—a process totally useless, except to obliterate the footmarks of the slovenly treading-in system.

Lastly, we will notice *A Treatise on the Cultivation of the Chrysanthemum for the Production of Specimen Blooms*, by G. Taylor. This is a shilling pamphlet that every cultivator of the Chrysanthemum, as a show flower, should read. Mr. Taylor is a successful cultivator of it for that purpose, and one of the causes of his success we are quite sure is, that he obtains strong plants for next year, by commencing propagating as soon after the blooming season as he can get cuttings. "By striking early," says Mr. Taylor, "the plant is enabled to store up sufficient organical matter in its infancy to meet the demands on its strength as the growing season advances. I prefer the strongest suckers with a portion of root attached to them."

The following is Mr. Taylor's list of Chrysanthemums "to grow for superb cut-blooms."

Name.	*Colour.*
Annie Salter (reflexed-flower)	Canary yellow, although at times it is incurved, but then it is spoiled
Cyclops	Straw and brown back
Christine	Lilac
Defiance	White
Duchess de Abrantes ..	Deep bright rose
Dupont de l' Eure ..	Purple and orange
Formosum	Creamy-white
Gem	White tipped with pink
Goliah	White
Lysias	Bright cinnamon-red
Nonpareil	Dark rosy-pink
Phidias	Rose and white
Rabelais	Reddish-carmine
Rebecca	Light rose, very sweet scent
Sydenham	Light red crimson
Queen of England	Blush
Two-coloured incurved ..	Red and yellow
The Warden	Orange

Having fully tested the quality and habits of a large number of the new varieties of 1851, I select the following:—

Name.	*Colour.*
Anaxa	Dark orange
Arc-en-ceil	Straw edge, dark purple
Guillaume Tell	Dark orange
Madame Corbay	Glossy slate
Marshal Ney, small but beautiful	Rosy lilac, tipped with gold
Madame Aubry	Light purple
Miss Kate, a promising flower,	Delicate lilac
Monge (reflex)	Light violet, tipped with gold
Plutus (fine form)	Bright light yellow
Racine	Straw with brown back
Rosa Mystica, fine broad petals similar in form to Vesta,	Very light rose

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FORSYTH MSS.

In the May of 1785, Mr. Anderson was informed that a botanic garden was resolved to be established at St. Vincent, and that Government had appointed him curator, with a salary of £300 a year. He immediately repaired to that island, and found himself opposed by the Governor, General Lincoln, who had possession of the house, and part of the garden, and wished to retain them for his own use. To this Mr. Anderson would not submit, and it was not until he appealed to the Home Government, backed by the influence of Mr. Forsyth and Sir Joseph Banks, that he was put fully into possession of the entire grounds Mr. Bryan Edwards, writing at the time, in his "History of the West India Islands" thus speaks of Mr. Anderson's successful exertions:—"The public establishment that reflects the greatest honour on St. Vincent's is its celebrated botanic garden, under the provident and well-directed care of Mr. Anderson. It consists of 30 acres, of which no less than 16 are in high cultivation, abounding not only with almost every species of the vegetable world which nature has bestowed on these islands for use and beauty, for food and luxury, but also with many valuable exotics from the East Indies and South America."

By the close of the year 1785, Mr. Anderson became comfortably established in his new position, and on the 4th of November writes as follows to an old fellow medical student, Mr. John Smith, who had received an appointment in the East Indies:—

MR. A. ANDERSON TO MR. J. SMITH.

With pleasure, indeed, was I informed of your welfare and present situation, by your letter of the — Feb., 1784, to Mr. Horne, who was so indulgent as to let me peruse it. I am happy the climate and mode of living in the Indies are so congenial to your disposition, and may the continuation of

your health, and the smiles of fortune, so far countenance your pursuits, as to enable you to return to your native country in a state of independence and happiness.

How often have I taken a retrospect of the pleasure we enjoyed from the ideal views and fruitless wishes of our future situations in life, when we passed the long evenings in the little room behind the shop, and with our cigar and grog we banished care from our cheerful hearts. Although our wishes were then founded on imagination, yet were they rational and innocent, and may they yet be realised at some future period.

But ah! how soon is the strongest tie of friendship dissolved by time and distance. The poor "parson" never had one scrape of a pen from you since you left St. Lucia, although he wrote to you twice; but I assure you not one of your West India acquaintance wishes you better, or whose sentiments of friendship are more pure and unalterable. But you will think I personate the parson too much by this serious strain, and that I ought to say something of news of your acquaintance; but as Mr. Horne tells me he is to write to you by this packet, I shall leave the task to him. I shall only tell you he is in partnership with Patrick Connor, and doing very well; he also acts as hospital mate. "The parson," God be thanked, is not the most unlucky; and, notwithstanding your forgetfulness of him, I am confident our former friendship is not so erased out of your breast but you will be glad to know how he fares. The king has appointed him to superintend the botanic garden in this island, formerly in the possession of Dr. Young, and he is countenanced and supported by gentlemen of the first class in England. He is in possession of one of the pleasantest spots perhaps in the West Indies, and he often wishes in his solitary hours for you to partake of the pleasure of his rural scenes.

But, dear Smith, I have a great charge invested in me, and to discharge my duty requires every exertion of both mind and body. And what do you think of picking up a few seeds for me in your leisure hours, and for your amusement? In so doing, you would be of great assistance to me, as you are in a country where everything you see will be new here, and consequently valuable; the most common things do not despise, they are often the most valuable. You must have many spare moments, and by devoting them this way it will soon become pleasing to you, and will be a credit to you. It is from medical men who travel that improvements to natural history are expected, and what an untrodden field have you. You may do a great deal with little trouble or attracting your attention from your necessary concerns. Take my word for it, you cannot employ your time better, and it may prove more advantageous to you than you may imagine; for nothing recommends a medical man more, or renders him more conspicuous, than such disquisitions. But you will say, you know nothing of natural history, and it would be vanity for you to do anything that way. That is nothing—I knew nothing of it once; and you well know that natural philosophy has not been always the most improved by its professors. Everything you meet with will be valuable; you have only to pick them up, and write the common name of the country, and their properties, if known there, on the paper you inclose them in.

Will you be so kind as to send me seeds, or any natural production that comes in your way, as animals, fishes, minerals, &c., and specimens of plants—*i. e.*, a piece of the branch with its flowers dryed—and any observation you may make on the natural face of the country, phenomena of nature, natural disposition, manners, and tradition of the natives; and you should particularly observe the diseases and mode of treatment.

My dear sir, I recommend these things to you for your own advantage, and if you allot some of your spare time that way you will soon be sensible of it, and may be of great service to me, as I particularly want the East India plants. And, depend upon it, whatever assistance you give me in my pursuits, or any of your observations, shall be faithfully laid before the President of the Royal Society.

I wish I was a year or two with you, to range your woods and wilds. I have many things to say to you, but time will not permit. Do not become so nabobish as to quite forget your friends in this poor corner of the world.

GOSSIP.

It is most gratifying to witness the energy with which the public are bestirring themselves to save *the Crystal Palace*, and to retain it in its present position. The condemnation of the two Commissioners who were so complaisant as to sign Lord Seymour's Report is equally general and loud. Sir Joseph Paxton is indefatigable in his exertions to preserve his magnificent creation, and he is sanguine of success. Well knowing that the command of money is as efficient in saving Crystal Palaces as it is in saving nations, when war is waged against them, he consulted some of the members of the monied interest as to the extent to which he could be sustained. He placed his designs before them, and these were so well received, that he was informed in reply, that five hundred thousand pounds would be forthcoming to carry out his intentions. What those intentions are, we do not profess to know, and we hope he will keep them secret, for imagination will work wonders in his favour, whereas, if he published his projects, hundreds of critics would "sound their horns as they danced on each *beam*."

At the Meeting of the Edinburgh Botanical Society, on the 8th of this month, a paper by Mr. James Fulton was read, *On the Economic Uses of Chicory*.

"The author, after giving a general account of the history of the chicory plant, and alluding to the antiquity of its cultivation, proceeded to point out the wide range of economic uses to which it might be made applicable, and urged the importance of extending its cultivation. Its extensive use as an ingredient in coffee over the whole of Continental Europe is well known. As a forage plant, it is known to form some of the best meadows in the south of France and Lombardy, succeeding in all seasons; while its use, as a salad, is likewise extensive. Since 1835, large quantities of the root have been imported to Britain from the Continent; it is now cultivated in several parts of England for the purpose of supplementing coffee, and as the plant is capable of bearing all the varieties of climate in Europe, being successfully cultivated from Italy to St. Petersburg, Mr. Fulton could see no reasonable objection to the extension of its cultivation throughout Britain, in order to supply our own markets. He stated that the popular idea of chicory giving an unpleasant flavour to coffee is erroneous, and entered into a detail of facts to show that an admixture of chicory was a great improvement to the flavour of coffee, adducing the experience of extensive dealers to prove the accuracy of this statement. He also considered the mixture an improvement in a physiological point of view. It had occurred to Mr. Fulton, that the bitter of the chicory root might be employed as a substitute for hops, and he had accordingly got manufactured a small brewing which had been successful, showing that the root not only communicates a pleasant bitter, but that it likewise in some measure substitutes the malt by a large amount of saccharine matter. Mr. Fulton had found the cultivation of chicory to be very easy, and had already published his views on this part of the subject, in the Transactions of the Highland and Agricultural Society. His crops had given a much larger money return than either potatoes or turnips on the same soil. It appeared to him that it was in remote districts of the country where the culture of chicory could be extensively pursued with the greatest advantage, the article being so light and convenient of transit, and free from the casualties, in all its processes of growth and preparation, which other crops are liable to, and where the risk and cost of transportation reduce so much the net value of our bulky green crops. The paper was illustrated by an interesting series of specimens showing the chicory in its various stages of preparation, as a substitute for coffee; also, ale brewed from chicory."

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Botanic, Royal, May 19, June 9, 30.
Caledonian (Inverleith Row), Edinburgh, May 8, June 3, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, May 13, June 15, Aug. 26.
Clapham, May 1, July 8, Sept. 11.
Chiswick, May 8, June 12, July 10.
Colchester and East Essex, May 26, at Mr. B. R. Cant's Nursery; June 23, at Mr. J. Taylor's, West Lodge, Lexdon Road; Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Derby, May 26, Aug. 4.
Durham, June 16, Sept. 8.
Guildford, June 16 (Millmead House).
Hampshire, May 18 (Southampton), July 1 (Winchester), Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hexham, Sept. 15, 16.
Hull, May 27, June 24, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), June 24, Sept. 9.
Lincoln, May 25, July 27, Sept. 14.
Liverpool, May 20, June 24, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), April 27, May 11†, 25, June 8†, 22, July 13†, 27, Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Mid Calder (Parish school-room), July 9, Sept. 10.
National Tulip Society, May 27 (Birmingham).
North London, Sept. 14; Nov. 23, Chrysanthemum.
Northampton, May 25, Tulip; June 29, Rose and Pink; July 27, Carnation; Sept. 27, Dahlia.
South London, Royal, April 22, May 13†, 20, June 17†, 23, July 15†, 21, Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
South Devon, May 18, July 13, Sept. 6.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Turriff, June 11, Aug. 6, Sept. 17.
Whitehaven, July 9, Pinks; Sept. 17, Dahlias.

POULTRY SHOWS.

Agricultural Society (Royal), Lewes, July 12.

At the *Newcastle Poultry Show* reported in our last, we should have stated, that both the first and second prizes for Cochin-China fowls were awarded to Mrs. Trotter.

POSITION OF TRAINED FRUIT-TREES AT THE PRESENT PERIOD.

We really do not see why those who cater for the mental gratification of those who feel an interest in gardening, should not assume a kind of epoch in cultural matters, and, like our best commercialists, "take stock." Let us, then, have a five minutes' review of our fruit-trees.

Who ever knew such a prevalence of easterly winds, and their usual accompaniment, drought? We have had, in these parts, something like seven weeks, all but continuous, in fact, only one day's intermission during the whole period. This is, indeed, most extraordinary, and must exercise a corresponding influence on our fruit-trees. Added to this, we may fairly set down more than half the nights during that period as frosty; the thermometer indicating from two to eight degrees of frost. Now, this state of weather, although the subject of much complaint from ladies'-maids and school-boys, is near the condition we should desire for fruit-trees in general, which have been retarded and protected according to the principles we have so long advocated, and which no man of weight has, at present, gainsayed; indeed, we perceive that they begin to find a place in some other periodicals. And why beneficial to fruit? In this way, on the principle of reciprocation. There cannot now be a shadow of hesitation as to the open recognition of this principle. We do not say that fruit-blossoms will not "set" without a root-action, but this we stoutly affirm, that trees in bloom, with a sluggish or torpid root, will assuredly give but an imperfect development, and that in a very lean condition. Setting, under such conditions, becomes much perilled; and this is not all, for much of the progeny, if set, never attains a proper size and form; and we may fairly question whether all the conditions requisite to carry out the ripening process, as regards flavour and pulpiness, be present. This spring, the retarding principle is carried out, or nearly so, by nature. Indeed, as far as apricots and peaches are concerned, we never saw anything superior to the setting and swelling.

And now to another phase of the question,—the retardation of the branches through drought. Periods of drought, however they may affect surface vegetation, are of immense benefit to many of the arborescent tribes, especially in early spring and during the month of October. Occurring in the latter period, they give an early solidification to the wood, of eminent service to all trees and plants from warmer climes; and in spring, by emptying the soil thoroughly of all stagnating moisture, at once pave the way for the free reception of the revivifying gases of the atmosphere, and the early accumulation of ground heat,—the latter of singular importance.

Another bearing of some consideration has this hitherto but half-investigated practice. Spring droughts have a marked tendency to the production of blossom buds in the ensuing year. Droughts of such character are, of course, averse to the plethoric habit, which is well known to be adverse to a liberal fruitfulness. It remains, however, for the thoughtful and anticipating cultivator so to shape his course, that trees over-worked, or low in constitutional vigour, shall not suffer in common with the vigorous. This brings us to the recommendation of mulchings, with occasional applications of liquid-manure —a practice which with us this spring finds almost daily usage. We had intended to address ourselves to the orchard-house subject this week, but must pass it this time, and try to get in some sound advice concerning the policy of the period.

Insects.—It may here be repeated, that no man can do justice to the cultivation of fruits, who permits the continuance of these vegetable bloodsuckers. It is vain to talk of composts, aspects, scientific modes of pruning, training, &c., unless a war of extermination be kept up with these Lilliputian enemies. We have this last week thrice syringed a peach wall, which we are very proud of, with tobacco-water: now every insect is dead, and the wall being yellow with our clay and sulphur mixture, we at once hurl defiance at the red spider. We will engage that these peaches and nectarines will produce all the wood we desire for next year within five weeks of the period at which we write. With the early developments of the peach and the nectarine are there sure to be a batch of the aphides, come how they may. Next, in order, we may look sharp out for the curled leaf on the apricots, pointing to the hatchings of the larvæ of the Red Bar moth; and, shortly after, we may look for those blue or glaucous-looking aphides which infest the plum and the cherry. It need scarcely be repeated that tobacco is the best remedy, at present, whether in fumes of smoke, termed fumigating, or as a liquid; four ounces of strong shag tobacco to a gallon of warm water, reserving the squeezed

† For seedlings only.

tobacco for fumigating purposes. Brown's fumigator is excellent for amateurs in a small way, for by it, being provided with a portable tree cover, any individual tree may be cleared of these insects in ten minutes, and that, too, with two ounces of tobacco, and not the slightest inconvenience to the operator. We thus put our veto, feeble though it may be, on the demands of the insect world, as regards our domesticated fruits; and we earnestly implore all those who are really interested in their gardens, to let no excuse come between them and their desire on these enemies; remembering that not a day may be lost, if they desire first-rate success, not only present but prospective. If we hear of any insect complaints in the autumn, we shall point emphatically to the warnings of these pages.

Disbudding.—This indispensable process must commence immediately, and, as before advised, must proceed in a progressive way. A too copious application of disbudding at any period sadly paralyses the energies of the tree, and, is indeed, so very artistical, or rather unnatural a procedure, that common sense is at once offended on the least consideration. It is, however, a most unscientific proceeding, and must rather be viewed in the light of a matter forced on us. Peaches and nectarines first demand our attention; then, perhaps, pears and apricots, and plums shortly afterwards. We disbud our peaches at three or four different periods, which extend from the end of April until the end of May, by which time we endeavour to avoid longer retaining a single shoot, for which a reason does not exist. Those who can give the necessary attention, may be assured that, if possible, every shoot may be removed in this progressive way, which is not required in the ensuing year. However it is well to make the final clearance somewhat late in the spring. This advice we offer especially to the uninformed.

At the first disbudding, let all the back and foreright shoots be removed, unless required for a blank; in the second, remove those close to the leaders, and one from all doubles, or twin buds; and, indeed, single out the shoots just as one would single out young seed-crops, taking care to leave the lowest young shoot at every point of junction or fork, as such are practically termed. During these proceedings, let any shoot about which a doubt exists grow some three inches in length, and then pinch the point off; such can either be retained ultimately, or removed at the eleventh hour, without any derangement of the training plan, or the functions of the tree.

Before we finish these remarks, let us again recur to the subject of *mulching*: this is peculiarly a spring duty. As before observed in our earlier papers, wherever a case of weakness occurs, when trees have been hard-cropped, and make little wood in consequence, wherever it is desirable to increase the volume of the branches speedily; and, finally, wherever soils are liable to drought, there a case for mulching exists. To talk about intercepting the solar rays in such cases is mere fiddle-faddle, or, rather perhaps we should more politely say, an incontrovertible fact; for in very truth, in the latter case, it is indeed the solar rays whose fierceness we deprecate, and would rather enjoy a permenance of moisture, albeit at the expense of a little ground-heat.

We have mulched a great deal in our time, and much, very much, in the past three weeks; and our practice so persisted in, we do admit, either places us in the list of incurables, or proves that we have profited by long experience. Robert Errington.

MODES OF STOCKING BORDERS: GERANIUMS—SHOWY-LEAVED PLANTS.

Those of our readers who wish to indulge in a few nice flower-beds, but have "neither pit nor greenhouse" to keep bedding plants in through the winter, go to market very soon to purchase as many as they can afford, and make up the rest with seeds of annuals, biennials, and some of the more showy and easily-to-be-got herbaceous plants and bulbs; and, of all things in the world, to stock a moderate garden from the shop is the most difficult thing to do well and satisfactorily, even with a bag full of money, to say nothing of bad seeds, and trumpery little plants got up on purpose to turn a penny by speculators, who do not care a straw if all your purchases were at the bottom of the sea the moment they are clear from his premises. There is the chance against the purchaser of getting pot-bound, starved plants, on the one hand, and, on the other hand, many that were propagated so late in the season that they are not half inured to the air by the time they ought to be planted, and the first cold night or scorching sun is sure to destroy them. I know several places, some of them of considerable extent, and where regular gardeners are kept, where most of the bedding-out plants are bought in every year, and the plan answers well; but then it is based on a sure foundation. A respectable nurseryman is bargained with, long before planting-out time, to supply so many verbenas, petunias, calceolarias, geraniums, and all the rest of them, at so much per dozen, allowing so much space between the plants in the beds, so that there is no temptation to plant too many for the sake of their price, or too few of them when the stock is limited. The price per dozen is a private affair altogether, with which public writers have nothing to do. Sometimes you may meet with a dealer who has ten times more of a particular tribe than he knows what to do with, and therefore would sell them much below a trade price, and there is no combination or amalgamation in the nursery trade to interfere between the flower-gardeners and the retailers of cheap plants. But if the arrangement were to stop here, our frail natures could not in all cases withstand the temptations thus opened for doing as we would not be done by, and by degrees all the mischiefs of cheap dealers, bad seeds, and worse plants, would creep in upon us; but the system which I wish particularly to recommend, and which I know has been found to work well, is on a safer footing. At the time the first bargain is struck for the supply of so many plants, the distances at which the different kinds are to be set apart is fixed on, then the nurseryman is to plant them, and is to be responsible for their doing well for the next six months, or till they spread all over the surface of the beds; and if there are any gaps where plants have died, by this certain period, the price per dozen is reduced so much, so that the nurseryman is as much interested in the safety of the plants as the owner of the beds, and the sooner the beds are full and in good show, the safer he is, and the sooner he knows his full price. The price of a plant, or a score of plants in a given list, is not the least criterion whatever as to the real value of such plants. A *Rob Roy* geranium, at sixpence, may be a dearer plant than a *Rob Roy* at three shillings and sixpence, and so with every plant in our Dictionary.

There is another, and a very safe way of furnishing beds with bought-in plants, that is, to estimate for the size of the beds, instead of for so many plants at regular distances; and this is the way I would do myself if I were to plant under the circumstances, because I know the secret of how this would suit both parties better. I would give the dealer a map of my beds with their exact measurements, and the kinds of plants I wished them to be filled with, and I would allow him to plant as many in a bed as he thought proper, or as few as he choose, only he must guarantee the whole to be full by a certain time—then his large old plants would pay him for wintering them, because one of them would cover as much ground as four young ones of the same sort. There are no

plants which pay better for keeping over the winter than *geraniums* and *calceolarias*; *old petunias*, under a particular treatment, come in next best; some of them, when propagated late in the spring, are very apt to go off after planting, when the weather is unfavourable, or the situation is much exposed; and the way to make old plants of them go off right at first is to propagate them in August from the very points of the young shoots, *with the top bud or point cut off* at the time of making the cuttings. I am not sure if this is not the best way with cuttings of them at all times, because if they are put into a close warm pit they grow on without roots for a time, and that causes the stem to get weak and long jointed; and you should never buy or plant a *petunia* that is long-jointed next the pot, the least accident will snap it off between the joints, and if below the lowest joint you never see any more of it. Here, then, the stopping in the first instance becomes apparent to any one; before the stopped cutting in August can extend it is rooted, and three, if not four, joints are ready to make so many shoots at the same time—so that, instead of a long-legged plant getting so top-heavy in time as to break its own neck or leg, as it only has one leg to stand on, you have a bushy one from the surface of the pot or bed at once; then by nipping off the points again when the shoots made three joints a-piece, you multiply the shoots by arithmetical rule, and four such plants can be wintered in a small pot; and early in the spring all the tops come in for early cuttings, and then the plants would pay well for repotting into single pots; and after another crop or two of top cuttings, see what nice bushy plants they would be for the nurseryman who contracted to fill a bed of them in a very bleak part of the country, when his spring cuttings would do very well for more sheltered gardens, or where the people knew better how to manage them after planting. All this is very simple to us gardeners, because we know the real working of the system; but it is another thing to make the public believe its own interest. We shall never be able to sift simpletons from the surface of society; and, as long as there are gulls swarming about, if we are not allowed to shoot at them with powder and shot, in a sportsmanlike way, why we must bait our hooks and pull them in shore in a less straightforward manner. At any rate we know that there is a class of dealers on the look-out for such customers every day in the year.

Is it not surprising that we never see the *Golden Chain* geranium advertised by any one, the scarcest and the very best of them all? *The Dandy* is the next nearest to it to match; this is still a scarce plant, and no one takes it up as a trade plant; then *Lady Plymouth*, or the *Variegated Oak-leaf*; how is it that we never hear of this one either?—it is fully as scarce as the other two; then the next gem is my own seedling of last year, the *Shrubland Pet*, and I congratulate Mr. Henderson on being so fortunate as to have got hold of it so early; but my worthy friend, and fortunate successor, Mr. Davidson, has given it a wrong parentage; I must take the blame of that, however, as very likely I may have not explained the cross to him, not dreaming that the plant would have been sold. In the advertisement, *Moore's Victory* is said to be the pollen parent, but I have said already, that *Moore's Victory* never produced pollen with me, nor could I seed it by all the experiments that I could think of. The mother of *Shrubland Pet* is lost, and so is the father; *Unique* and *Moore's Victory*, had nothing to do with, but it is from the same wild species (*Capitatum*) as *Unique* itself sprung from, and all that race have the same trailing habit as *Unique*. If the *Shrubland Pet* should seed, *Unique* is the most likely to cross with it, and a cross from such parents would be worth its weight in gold dust. It is a plant that should never be planted in a large bed, nor mix with large flowering sorts. *The Curate* would make a near match to it, and if they were planted so, *the Curate* must have the very richest soil that can be mixed, and the *Shrubland Pet* must have it light and poor, as if you put it into a deep, rich bed, the leaves get too strong for the trusses. I put it into a rich bed last year, and I had to pick off many of the leaves—every ten days—last autumn.

Although I have always set my face against private gardeners selling plants of their own raising, for fear of the temptation it might lead them into, I should be glad to hear that Mr. Henderson would sell every morsel of the *Pet*, in order that it may soon get into so many ways of cultivation, soils, situations, &c., that some one may make a lucky hit in seed in seeding it, as it is the only chance I know of for breaking into the strain of the *Unique*. Meantime, if I have been fortunate enough to enlist volunteers for improving the race of bedding geraniums, I would advise them forthwith to procure a little weed, called *Geranium* or *Pelargonium capitatum*, and then turn to page 289 of our last volume of The Cottage Gardener, to recruit their memory about the way of going to work with it, and where the history and pedigree of the *Shrubland Pet* is given.

I had a letter, last autumn, from a gentleman who writes in our periodicals under the signature of *Dodman*. He was over on the Continent last October; saw several things in the gardens in Germany, which we do not practice here, and he wished me to notice some of them in The Cottage Gardener, as being worthy of imitation in certain localities, more especially in large places, where there is ample space to exhibit several styles of planting and grouping. He named, more particularly, large beds of plants put in especially for the beauty or singularity of their leaves, without any regard to flowers; Indian Shots, or *Cannas*, several species; *Maranta zebrina*, a stove plant with us, looks singularly in the open ground there, and no doubt would do the same here if we could take sufficient courage to trust it out-of-doors, in some warm, damp situation, from the end of June to the beginning of October; and I firmly believe that every species belonging to the order of *Marants* and *Gingerworts*, would grow most luxuriant with us in the autumn in the same way. I believe, also, that if their roots were taken up in October, just as we take up the dahlias, and kept dry and warm all the winter, we might plant them out in May, year after year, and that thus managed, they would look *in the leaf* much more healthy and in character than anything in the same way yet seen in our stoves; for it must be recollected that almost all the plants of these orders are among the "herbaceous plants" of the tropics in both hemispheres. In 1833, 34, and 35, I had sixteen species of *Hedychiums*, five of *Canna*, one *Curcuma*, and a few others of the tribe that I now forget, in the open ground winter and summer, without losing a single plant of them. They were in a damp recess, in a sheltered border, in the shrubbery, and protected with dry leaves in winter; some of the Cannas flowered, the others did not; this was at Haffield, in Herefordshire, not far from the south-west end of the Malvern Hills, the most beautiful spot, and the richest scenery, according to my taste, in all England; and I think J. C. Wheeler, of Gloucester, who has the good sense to advertise in our columns, saw these plants oftener than once. The *Musa sapientum* I often had out there all the summer; *Renealmias* also; the "Opera Girls," or *Mantisia Saltatoria*, I have not seen since I saw it in that border; *Costus*, *Roscoea*, and *Kæmpferia*, were there also; the common ginger plant, the *Amomum* and the *Alpinia nutans*, the same; but I never tried the *Maranta zebrina* out, and, indeed, I forgot all about them until "Dodman" reminded me of what he saw in the same style in Ger-

many last autumn. Soon after the time I am writing about, I sent a whole van-load of these, and other rare plants, to the Surrey Zoological Gardens, then owned by Mr. Cross, from a suggestion by Mr. Loudon in *The Gardeners' Magazine;* and I heard afterwards that a *Curcuma*, with immense leaves, which stood out four summers with me, was sent to Mrs. Maryatt, at Wimbledon House. I have no room now to mention the plants pointed out to me by "Dodman" as most suitable for this kind of experiment, but I like the idea much, where it can be carried out; and from the above, though on a small scale, no one need fear that our summer climate is too cold in July, August, and September, for any plant from any part of the world. D. Beaton.

CAPE HEATHS.

(*Continued from page* 34.)

Position.—I have already instanced how our friends, with one house, and vines up the rafters even of that house, may grow heaths successfully, if they confine their attention chiefly to winter and spring-blooming species and varieties. Those who have only one house, though devoted entirely to plants, and may-be some simple auxiliary structure besides, will find, if they try a more mixed collection, that much of their success will depend upon the position the plants occupy at the different periods of their growth. What we have to say, however, must be taken in connection with what has been advanced upon times of flowering, pruning, potting, &c., as no one would think of treating a newly-potted plant like a plant established in its pot, &c. Keeping these matters in view I shall glance

First, at the *position Heaths should occupy in winter.*—In every case they should have full access to light, and be near the glass, with command of fresh air at pleasure. Wherever it is possible, however, a classification should be made—those blowing and showing for bloom being kept in the warmest end; those growing on for spring and early summer flowering, in a medium position; and those that will come in in the end of summer being kept the coolest. For the first, unless there is plenty of sunshine to open the flowers during the day, the average artificial night temperature will not answer below 45°; for the second group 40°; and for the third 35°. I have already instanced, under *temperature*, the general principles to be observed in this respect, and it is safest to avoid extremes. By such arrangement we can give most air to the third, less to the second, and least to the first. For *all*, air will be necessary; but for the second group, and the third especially, it should never be omitted, unless the atmosphere is so foggy that it would place the plants in a mist, which, if it does gain entrance, must be expelled by extra heat; or so frosty and dry that the plants would be robbed of their juices as effectually as if placed before a roaring fire. In the latter case, if the sun on the upright glass should raise the temperature inconveniently high, it is better to shade and damp the house in preference to giving air. All this can be better done by arranging plants in groups, instead of placing the plants in bloom in a geometric regularity over the house.

Secondly, *Position in Spring*,—which we may consider as embracing from the end of February to past the middle of May. The generality of the plants may occupy a similar position in the house to that they did in winter; artificial heat will seldom be necessary after the end of March; and if people could be weather oracles, or, what would answer as well, attend to their house the last thing late at night, the houses need never, unless in extreme cases, be shut up entirely after the middle of April. The air left at first should be at the end where the latest flowering plants are placed. Of course this would not answer so well where you have a mixed lot of soft-wooded plants, growing or in bloom. The only thing against leaving the plants in a position so near the glass, arises from the injury often done to the roots (unless care is exercised) by a bright sun beating upon the red pots. Attention to water and air will lessen the danger, but not remove it. After many trials I have found nothing superior to the clumsy mode of placing the plant with its pot inside of a pot still larger, and stuffing the space between them at the rim and the bottom with moss. Some patrons of neatness may shrug their shoulders at your want of dressedness, but console yourselves by the thought that confined air is a bad conductor of heat; and remember, that whilst the branches of your plants are nourished by the sun's rays, the roots are delightfully equal—neither parched, nor swamped—scorched at one time, nor frosted at another. In these utilitarian days why should we not have pots, cheap and light, with double sides for valuable plants, and something more artistic than they are at present? Any enterprising pot-maker is welcome to the hint: he may patent it too, if he likes; though I would throw patents and registering to the winds, and try and get the first start in the market. When that is done the colour of the pot may be what you like, if not too light, nor too dismal. With our present pots it would be of no great use altering the colour so far as mere culture is concerned. The various shades of red hold a *medium* place as respects the absorbing, the radiating, and the reflection of heat. If so dark as to approach a black, heat from the sun is rapidly absorbed, and as rapidly parted with afterwards. If so light as to approach a white, the reflection of heat is so powerful as to inconvenience vegetation in its neighbourhood. The cottage housewife knows that the quickness of cooking in a tin Dutch oven, before the fire, depends upon the brightness of the interior side of the metal. The young gardener who claps a substitute called a *bonnet* of the same metal, behind a plate containing his rasher of bacon, knows the same fact. If from dirt, or otherwise, it becomes dark in colour, the heat is absorbed and radiated partly into the kitchen, instead of being reflected on the meat. Truths do not alter, though we may alter and forget them. I have seen vegetation that could not be made to thrive near the top of the back wall in a house, until that wall was made darker in colour. It is very easy, therefore, to have the plastering and wood-work in a plant-house, on which the rays of the sun strike, so *white*, as to scorch the vegetation near it by reflection of heat. Even out of doors I have found it difficult to get little plants of a crawling nature to go over the lips of vases that were light in colour, while over those of a darker stone-colour they would hang and festoon in the greatest luxuriance. A very light whitish-colour, in a pot single or double, we should look upon as very trying to the lower branches of heaths, though it might be superior to some other colours, so far as the roots were concerned, as reflecting and absorbing powers are generally opposed to each other. These double pots will be of advantage during the season. Few, except the hardiest heaths, will now be benefited by being placed out of doors. This digression about pots, in a chapter on *position*, is more seeming than real. Trifles are the foundation of success He was no flat who propounded the adage "Look after the pence, the pounds will take care of themselves." Though abased for encouraging penuriousness, it contains a great generally-applicable philosophic truth.

Third.—*The position of the Heaths in summer.*—This we would suppose to range from the end of May to the middle of September. Here we would avoid any sudden extreme; but the treatment in the middle of summer requires to be very different from what obtained in the middle of spring, just because the circumstances of the

season are so different. We shall allude to the position in gradation. First :—the best will be the house or heathery; the plants set there, with abundance of air streaming through them, by the pulling down and up, or altogether removing the side sashes. Of course, newly-pruned or newly-potted plants, will *not* receive this treatment. As a *standing* medium nothing excels stout wooden trellises; the next best is stone, the next slate, the last, and worst, iron. If the last should be used, instead of painting it after being cast, it will be better to send it to a galvanising company to receive a dip. When the house is supported on walls, two or three feet in height, it is advisable to have ventilators also in the wall close to the ground level. Unless in storms it is scarcely possible to have too much air; and in warm, dull weather, or with a drizzling rain, the roof sashes might also be removed. But kept cool in winter, the plants will stand *thicker* safely than it would be prudent to have them in summer. On this account, and also for introducing other things in bloom, a number must be removed: of these the hardier kinds should be moved first, and the older best-established of the second hardy afterwards. The second best place for these is a frame or wooden box, so that by setting it on bricks, a stream of air percolates through its bottom, as well as by moving the sashes that cover it. The third best is a turf or earth pit, with holes left for the currents of air below. The fourth is a brick pit similarly provided, and the fifth is a place by the side of a fence or hedge, where a thin canvass can be used to defend from the fierceness of a mid-day sun, though even that would not do much injury to healthy plants, only it would make them look browner for a time than some people would like. In all these positions, the plants should be set on a couple of tiles or bricks, or any other make-shift, so that worms be excluded, water allowed to percolate, and air freely to circulate. The sashes will chiefly be wanted in the middle of bright days; of course this treatment is not to be applied to plants newly-potted, or that we wish to grow rapidly. The sides of these pits, &c., act as a safeguard to the sides of the pot.

Fourth. *Autumn position.* I have already exceeded my limits, and must only say,—house the slowest-growing and tenderest first—never let even the hardiest be frosted—give plenty of air so long as the weather will let you, and during winter act according as you wish merely to preserve, or also to grow and bloom. Before housing, beware of allowing them to be soaked with cold autumn rains. R. Fish.

CULTURE OF ACHIMENES FOR SPECIMEN PLANTS.

(*Continued from page* 35.)

In our last paper on this subject, we mentioned that the plants in pans should be put in with the soil below the rim of the pans *two* inches. It should have been *three* or *four* inches, and for this reason; the plants push out roots from the stems, and these roots it is desirable to encourage. As the plants grow, the space left below the rim of the pots should be filled up with the compost; this greatly assists the growth of the plants, the roots strike into fresh soil, and thus increase the power of progression in growth.

Training.—It will be necessary to train the shoots as they grow, in order to cause the whole to form a regular-shaped bush. To do this, it will be necessary to use sticks, but they should not be so long as to reach above the tops of the shoots, and they should be painted green, rendering them scarcely visible, even when first applied. When the shoots have been trained in the way they should grow, they will soon hide these supports, and not be offensive to the most fastidious. We are no advocate for sticks, but they are necessary evils, and should be kept out of sight as much as possible. A very little practice will enable even a new beginner so to arrange the shoots as to cause them to form a handsome specimen. The most showy form is that of a pyramid, and to obtain that form, the strongest shoots should be placed in the centre, the next around them, and the shortest at the sides. If this is well done, the plants will be dense in foliage, and flowered down to the edges of the pots.

Watering.—As the compost is open and well-drained, they will bear, when growing and in bloom, a liberal supply of water. Every third or fourth time add a small quantity of liquid-manure to the water; this will strengthen the growth, and heighten the colour of the flowers, as well as their size. Previously to blooming, let them be syringed over the plants with tepid water frequently.

Insects.—Fortunately, on account of the growth being only annual, these lovely plants are not much troubled with insects. It is true, that when growing in a dirty house, where insects are allowed to get the upper hand, the red spider and the green fly will travel from other plants to the achimenes, but in these days of good gardening this is now, happily, a rare case. However, if these pests do appear, let no time be lost in applying the usual remedies. As our able coadjutor, Mr. Errington, says:—"Our readers may depend upon it, prevention is better than cure, and assuredly less disastrous in its effects." But we cannot agree with him that every gardener should set his face against *tobacco-paper.* It is true, if it is bad, it is of no use, neither is tobacco itself; but if it is good, it is assuredly much cheaper than the best tobacco, and as a proof, we need only mention that in the extensive establishment of Pine-apple Place, we use nothing else to destroy the green fly. We have found it destructive also to that pest, the black thrip, so injurious to many plants, and to none more so than the Indian orchids. Well, then, if the green fly appears on the achimenes, smoke them with tobacco-paper, but procure it from a respectable dealer who will warrant it *good.* The red spider may be kept under by a free use of the syringe, and keeping up a large amount of atmospheric moisture, with a large admission of fresh air every fine day. If the weather should be gloomy for a long time, the mildew will sometimes make its appearance upon the young and tender leaves of these plants. This is a fearful disease, and its progress must be arrested immediately; the means are, as much fresh air as possible, combined with a higher and drier temperature, together with the application of a dusting over the leaves affected, of sulphur-vivum. Should any individual plant be very much affected with this fell disease, take it out of the house and destroy it altogether.

The placing of the plants during the earlier part of their growth in a warm pit, will give more room to the regular woody inhabitants of the stove or greenhouse, but as soon as the stove plants are out of bloom, put them in pots, and the greenhouse ones set out-of-doors; there is then plenty of room for such plants as *Achimenes, Gesneras,* and *Gloxinias.* These ornament the stove and greenhouse from May to September, and keep them gay with bloom all these months, if judiciously managed by potting them at different times in the earlier months of the year. If these showy plants are used to ornament the greenhouse, it must, of course, be kept rather warmer, by shutting up earlier in the afternoon, than if its regular inhabitants were kept in. No artificial heat will be wanted during the summer months if the greenhouse is shut up every night. The splendid annuals, such as balsams, coxcombs, &c., may be placed amongst them, and when they are all in

bloom together, there will be such a gorgeous display of floral beauty, as would rather astonish our forefathers in gardening, could they rise up some fine morning in June or July and see them.

These large pans of achimenes will yield a large supply of roots for the following season. The care required will be, when the bloom is over, to allow them gradually to die down in some pit or frame, then cut off the dead tops, and place them in some dry place out of the reach of frost, till the potting season comes round again.

In looking over our last paper on this subject, we find we have overlooked one species that is well worth being grown as a large, fine specimen. It is the *Achimenes grandiflora*, a species that grows about fifteen to eighteen inches high, and has large rose-coloured flowers. T. Appleby.

CULTURE OF ROSES IN POTS FOR EXHIBITION.

(*Continued from page* 53.)

Soil.—This is an important item in pot culture, for without the right soil, it is in vain to look for fine strong plants, or large full blooms. Many of our readers are aware that the Messrs. Paul, of Cheshunt, have been for years very successful in growing roses in pots for exhibition; the soil they use, Mr. W. Paul describes as being "two parts stiff strong turfy loam, well broken up, but not sifted; two parts manure (road gatherings laid by for a season, or hotbed manure not too far decomposed); and one part burnt earth. This compost (he says) should be laid up in a heap in autumn, and turned two or three times during the winter, and a little newly-slaked lime scattered throughout to destroy worms and grubs. This is the soil they use for the mass, but for the more delicate varieties (China and Tea-scented) it may be improved by the addition of one part leaf-mould, or well-pulverized manure." This is certainly a good soil for roses, whether in pots or planted out in the borders, but we believe, for the tenderer varieties, the addition of one part sharp sand would be useful; and we do not think such a long preparation necessary or advantageous, neither is the burnt earth indispensable.

Our recipe for compost for roses in pots is, first, *for the strong-growing varieties*, three parts strong turfy loam taken from some pasture not more than three inches deep, and one part good hotbed manure. Chop the loam well up, and mix the manure thoroughly into every part of it, a small quantity of quick-lime cast in amongst it at the time will be beneficial, and will not only destroy worms, slugs, &c., but will help to break down and decompose the vegetable matters in the compost. Secondly, for *the slender-growing varieties*, three parts of the same kind of loam, two parts leaf-mould, and one part sharp river sand, with the lime added as before. This will suit these tender roses, inasmuch as the sand will allow the water (the great enemy to the tender roots of these kinds of roses if retained too long in the soil) to pass through it freely; once or twice turning over and mixing will be a quite sufficient preparation. Having got the house and pit ready and the compost prepared, the next consideration is

The most suitable kinds for growing in pots.—It is quite true that all roses will, with proper care, bloom well in pots; but, as in other florists' flowers, there are diversities of merit, and as there is a considerable amount of expense and trouble in growing them in pots, it is very desirable to choose such varieties as experience has proved most desirable. A good habit, variety of colour, abundance of bloom, with the best forms, combined with a tolerably long season of bloom, and possessing or yielding the greatest amount of perfume; these are the properties most desirable for this purpose. The number to be cultivated in pots depends, as a matter of course, upon the convenience the cultivator may have at command. It is well known that roses are divided into several classes, but a list drawn up upon the classing system would, we think, be no more useful than the following in alphabetical order, especially as the class to which they belong is indicated immediately after the name. They possess more or less of all the characteristics indicated above as desirable properties for roses cultivated in pots to be exhibited.

Abbreviations.—(A.) alba (white), (B.) bourbon, (C.) Chinese, (G.) Gallica, (H. C.) hybrid China, (H. P.) hybrid perpetual, (M.) moss, (N.) Noisette, (P.) provence, (T.) tea-scented.

Abbe Mioland (C.), rosy-purple, striped with white.
Abricoté (T.), apricot-colour, margined with flesh.
Adam (T.), rich rosy-salmon.
Adele Prevost (G.), silvery blush.
Adrienne de Cordoville (P.), rosy-crimson.
Armosa (B.), fine bright pink.
Augustine Mouchelet (H. P.), rose, shaded with purple.
Baronne Prevost (H. P.), extra large, beautiful pale rose.
Belle de Segur (A.), fine blush, centre flesh-colour.
Blanche fleur (G.), fine flesh-white.
Blush (M.), blush pink.
Boule de Nanteuil (G.), brilliant crimson and purple.
Bouquet de Flore (B.), light carmine.
Cramoisie superieure (C.), bright velvety-crimson.
Caroline (T.), blush rose, shaded.
Chénédole (H. C.), light vermilion, very large.
Clara Sylvain (T.), white, with cream centre.
Coup d' Hebe (B.), deep rose.
Coup d' Hebe (H. C.), beautiful deep pink, the finest of forms.
Comte de Paris (H. P.), purple, crimson, and lilac.
D' Avranches (P.), blush-pink, dark centre.
D' Agnesseau (G.), deep bright crimson.
Dido (G.), crimson, rose edges.
Devoniensis (T.), large pale buff, with creamy-white edges.
Don Carlos (T.), white, buff, and salmon.
Duchess of Praslin (H. P.), delicate blush, pink centre.
Duchess of Sutherland (H. P.), fine rosy-pink.
Eliza Sauvage (T.), fine yellow, centre orange.
Elizabeth Plantier (H. C.), crimson-scarlet, shaded with dark crimson.
Etendard de Marengo (H. P.), brilliant crimson.
Eugene Desgaches (T.), bright rose.
Fleur d' Amour (G.), bright crimson, changing to purple.
Fulgens (H. C.), rich crimson.
Géant des Batailles (H. P.), brilliant crimson, shaded with purple.
General Allard (H. C.), deep rose-carmine.
General Negrier (H. P.), beautiful pale blush.
George Cuvier (B.), bright cherry-edged, with clear rose and purple.
Goubalt (T.), large rich rose, centre buff.
Henri Quatre (H. P.), bright pink.
Henry Barbet (H. C.), light carmine.
Jaune (T.), yellow.
Jaune (N.), (Smith's), yellow or straw-colour.
Jacques Lafitte (H. P.), bright rose, large and full.
Josephine Malton (T.), large, shaded buff and white.
Julie Mansais (T.), delicate straw-colour.
Kean (G.), scarlet, crimson, and purple, fine.
Lanei (M.), deep rosy-crimson, tinged with purple.
La Seduisante (A.), pink, white edges.
Lamarque (N.), fine sulphur-yellow, edges white.
La Pactole (N.), fine yellow.
La Reine (H. P.), large, lilac-like-satin, superb.
La Volupte (G.), bright crimson.
La Florifere (B.), rosy-lilac, margined with crimson.
Madame Breon (C.), large brilliant rose.
——— *Laffay* (H. P.), brilliant rose.
——— *Legras* (A.), pure white.
——— *Nerard* (B.), silvery pink blush.
——— *Plantier* (H. C.), pure white.
Madeleine (H. C.), pale flesh, edged with crimson.

Mirabile (T.), apricot-yellow.
Mrs. Bosanquet (C.), pale flesh, edges white.
Mrs. Elliott (H. P.), purplish rose.
Moiret (T.), large, yellowish-fawn.
Niphetos (T.), large snowy-white petals, like a magnolia flower.
Nitida (T.), white, tinted with pink.
Œillet Parfait (G.), white, striped with crimson.
Prince Esterhazy (T.), flesh, centre rose.
Pius the Ninth (H. P.), brilliant crimson.
Reine des Fleurs (H. P.), rosy-pink.
Paul Joseph (B.), superb velvety-crimson.
Paul Perras (H. P.), beautiful large rose.
Paul Ricaut (H. C.), bright rosy-crimson.
Persian Yellow (Austrian), the finest yellow.
Princess Lamballe (A.), pure white.
Princess Royal (M.), rosy-flesh, very beautiful.
Queen (B.), buff and salmon.
Reine de Lombardie (C.), rosy flesh-colour.
Sylvain (P.), brilliant rose.
Sophie de Marcilly (A.), flesh, edged with blush.
Souchet (B.), large, rich crimson-purple.
Speciosa (B.), full, shaded rose.
Souvenir d' un Ami (T.), salmon-rose shaded.
Soleil d' Austerlitz (H. P.), brilliant crimson.
Safrano (T.), fawn apricot yellow, the buds very beautiful.
Solfaterre (N.), beautiful fawn.
Taglioni (T.), creamy white, centre flesh-colour.
Tippoo Saib (H. C.), carmine, mottled with purple.
Triomphe du Luxemburg (T.), large and full flesh-colour, with rose and fawn centre.
Victor Hugo (H. C.), large, rosy-lilac.
Wm. Jesse (H. P.), large crimson, tinged with purple.

WATER, ITS USES AND ABUSES.

Perhaps there is no operation in all gardening affairs so often improperly performed as that in which water is applied to plants, seed-beds, &c. Many a time have we seen the poor cottager employing his evenings in carrying water from some spring well, with which he treats his favourites in such drenching quantities as would certainly terminate their existence, did not nature assist her progeny in withstanding such barbarous treatment; we call it barbarous, because a quart or two of cold hard water, administered every night to a newly-planted cabbage or cauliflower plant, does not deserve a better name; besides which, we have seen it dashed on to onion, and other seed-beds, in such quantities as almost to inundate them, leaving the sun to harden the surface the next day, in such a manner as to make them look like so many patches of concrete. Such a state of things can hardly be expected to be successful, unless other more kindly agents exercise their influence to save the crop from the systematic punishment it is undergoing through the mistaken kindness of its would-be-best-friends. Now, as the present spring has been one of more than ordinary drought in many districts, and has, doubtless, called forth the various energies of all who are interested in the welfare of garden produce, a few words on watering may be of service to the amateur and others; and in the first place, we beg to say, that we are no advocates of a course of regular dribbling, any more than of those thorough delugings noted above. When water is applied to a plant or plants enjoying the benefits of the open ground, we ought, as far as possible, to imitate nature in furnishing them with such refreshing food, the reverse to which is pouring large quantities on in bright sunny weather; rather let us take advantage of that which is dull or cloudy, and on some occasions, even when it actually rains, provided that we have reason to believe the fall will be inadequate to the wants of our crops. Now, though this latter case may, in the opinion of some people, resemble "carrying coals to Newcastle," yet we maintain it to be the very best time that water can be applied; the air being then loaded with moisture, supplies the foliage with that beverage so essential to its existence, whilst its roots may perhaps have absorbed all that the ground below was capable of yielding. It is, therefore, manifest that renovating the latter must be attended with the best results, as a means of laying by a store for future wants; this, therefore, is the most rational time to do it; of course, in following out advice of this kind, our readers will see that certain cases require it to be qualified accordingly. Plants, only small, and standing widely apart, will require but little water, compared with those crops the roots of which are supposed to occupy every inch of surface mould; the latter living, to a certain extent, on water alone, ought to be liberally supplied, but such allowances must not be stinted when any is given, otherwise the evil is increased.

The old saying that when you "once begin watering, you must keep at it," is not without much of truth in it; for water applied to crops, in such quantities as just to moisten the ground some two or three inches deep, induces the roots to occupy that portion of the ground, and to depend on it for their sustenance, and any omission of that regular feeding, or rather watering, is attended with bad consequences to the plants inured to such an artificial system of management. We, therefore, say that when water is applied to plants occupying the ground the whole depth cultivated, such crops ought, when watered at all, to have a good drenching; of this latter class, we may mention *Strawberries*, and similar things, while beds of seedlings, or beds newly-sown, and fears are entertained for the young brood's not coming up in consequence of the dry weather; in these cases, water may be applied more frequently, and in less quantities, as the object the water is expected to act upon is so much nearer the surface, and consequently more influenced by the state of the atmosphere, &c., than are crops which draw their food from a deeper and more extended source; we therefore, in concluding, warn the inexperienced cultivator against indulging his crops in such copious draughts of cold spring water, as, be assured, that however it may appear to revive the drooping foliage of his lately-planted cauliflower plants, such renovation resembles the temporary excitement which strong drinks have on the confirmed drunkard—a partial rally, followed by increased depression. Yet the watering-pot cannot be done without, and the present spring is one in which its utility has, perhaps, been more manifest than many others, a long succession of east winds having withdrawn so much moisture from the ground, seeds in the act of vegetating were denied that element so essential to success, that watering became more an object of necessity than choice; still, we urge on our readers to modify it as much as possible, and try the effects of shading, as well to check evaporation as well as the surface-hardening influence of the sunshine mentioned above. For beds of ordinary vegetables, we use pea stakes, which are generally beech or hornbeam. We are averse to spruce and other green firs, with the leaf on, as well as all other evergreens; their unsightly appearance is objectionable; besides which, we think the small foliage of the pinus tribe withering and falling amongst the tender herbage below is much worse than useless; such shading must be gradually removed as the plants gather strength, otherwise a sickly drawn growth will be the result. We need hardly add that liberal allowances of manure-water will be more beneficial to such crops as have much exhausted the soil below them, as *cauliflowers* standing some three or four together on the hill left by the removal of the handlight; here liquid-manure will be of great service, and the same in continuous rows of winter spinach, but we think it hardly called for in *Asparagus*, as the roots of that vegetable are scarcely in

full action yet; hereafter they will benefit by its generous influence.

Sundries.—Stick and sow *Peas*, and plant *Beans*. A second crop of *French Beans* may also be put in, in case the former sown ones miscarry. *Scarlet Runners* may also be planted, and a pan or two of the same put into some warm sheltered place, to obtain plants from, to fill up any gaps in this crop which in many places is difficult to avoid. Attend closely to crops expected to be making their appearance, and apply all the engines of destruction to those enemies the young brood are liable to. *Carrots*, in some soils, are a very precarious crop, and more than most crops have to be sown over again; it is better, when the sowing has been delayed to a late period, to go over the ground about a week afterwards, and dust lime, soot, or similar caustic matter. To wait until you see some of the plants, is very often to wait until most of them are gone; so much quicker-sighted are their foes than we are.

Harden off *Tomatoes, ridge Cucumbers, Chilies*, &c., and if any pans of *Basil* have been reared under glass, it may likewise be planted out after undergoing the transition state. Remove stalks of *Brocoli* after cutting, and manure and dig the ground when vacant, and let the walks, edgings, and all other portions of the garden be put into that state of order and neatness which makes a garden at this season an object worthy the notice of a visitor, as well as of promise in a more substantial point of view. John Robson.

FOOLS' PENCE.

By the Authoress of "My Flowers," &c.

I was very much interested, and extremely struck by an anecdote related to us but a few days ago, by a person whose word no one who knows his character would for an instant doubt; and I am sure my readers will be as much interested in it as I was. It is upon a subject on which I have often laid a great stress, and which cannot be brought too frequently, or too strongly, before the peasantry and humbler classes of England; and I do not think that one one could more heartily rejoice and thank God, if the anecdote benefits one single person who reads it, than the kind and excellent man who related the story.

The circumstances occurred some years ago, near Reading, in Berkshire, and possibly some cottage gardener may remember having heard of them. A man in a respectable trade, I believe he was a blacksmith, was a hard and determined drinker. He frequented the public-house on Sundays as well as other days; and was, of course, a man who regarded not God, and who did evil in other ways too. His poor wife and children fared as all drinking men's wives and children fare, and I am afraid too many poor families know very well how that is.

One Sabbath-day, this man was drinking, as usual, at the public-house during the hours of public worship. The mistress of the house came hastily into the tap-room, and said—"Here are the police coming, and you must not be seen here. Come with me, and I will shut you up in my best parlour until they are gone." The blacksmith, who feared not, and cared not for the eye of God, made haste to hide himself from that of man, and he remained a good while shut up in the parlour, until the landlady came to tell him the police were gone. He then said to her—"Dear me, what a beautiful room this is! I never was in such a one before. How did you ever buy such beautiful things as there are here?" "We bought them," replied the landlady, "with *fools' pence*." "What is that," asked the blacksmith, not quite catching her meaning. "With the pence," answered the woman, "that such as you spend at our house." The blacksmith, upon this, left the public-house, and went home, and the landlady saw him no more.

A few years after this occurrence, a respectable looking man, with his wife and children, all well and handsomely dressed for their station in life, entered this same public-house, and the father addressing the landlady, enquired if she remembered him. She said she had some knowledge of his face, but could not bring to mind who he was, or where she had seen him. "Do you remember," he said, "a man," giving his name, "whom you shut up in your parlour, to hide him from the police one Sunday morning, some years ago? I am that man, and I have brought my wife and children that you may see them now." The surprise of the landlady was great. She remembered him, and expressed her pleasure at seeing him in such altered circumstances, and so well and happy in appearance. "Yes," he said, "I am an altered man, and I am come to thank you for it. All the good clothes you see us in are bought with *fools' pence*. What I used to spend in drink, I have kept for my family ever since the day you last saw me, and we have thriven and lived comfortably upon it. The words you spoke to me I never forgot. They struck me mightily, and I determined to save *my* fools' pence, and not furnish other people's rooms with it. I have fed and clothed my family respectably ever since, and I hope I shall never again spend a shilling upon beer in a public-house. I had time to look at myself in the great looking-glass in your parlour that day too, and such an object as I seemed in my dirty working-dress, unshaved, and unwashed, made me quite sick and ashamed of myself. I believe I shall never again be the man I was then."

Now, these are *facts*; they are no invention; they are stubborn facts; and I hope my readers—those I mean, of course, who spend time at the beer-house—will take a lesson from the Berkshire blacksmith. When men complain that their families are ill-clothed, and hungry, and destitute, and have no friend to help them, let them remember the "fools' pence," and consider whether they themselves might not be the best friends that their wives and children could gain, if they did not give their money to furnish other people's smart parlours, and buy fine clothes for the beer-house keepers. A sober man has very seldom a wretched family; but the man who drinks *never can* have a thriving one. And let him consider, when he sees the mistress of a public-house come out in a green gown and pink ribbons, as I have seen some of them appear, that *his pence* have helped to buy that gown, and trim that cap. May they not well be called "*fools' pence?*"

But this blacksmith's case does not give me perfect contentment. It is a valuable lesson, certainly, and does most clearly, pointedly, and convincingly, prove the madness and misery of drink, its mischievous effects, and the worldly advantage of sobriety and steadiness; but there is a *want* in the narrative, a coldness and barrenness that seems to leave our minds hungry and unsatisfied. How is this? What is the want we feel in so interesting and true a tale? It is the want of spiritual influence, of religious principle, of holy motives. There is the "sweeping" and the "garnishing" of the man's character; but there is also the "emptiness" of the soul; and it is this that disappoints us, and robs the facts of half their value. The reformation was an entire one, and a striking one, but it was built upon the sandy soil of worldly wisdom, and not upon the rock that winds and floods cannot beat down. Let me exhort my readers to perceive and consider *this;* and in all the lessons they learn from passing events, to learn one of still higher importance, and still richer blessing—that without true and complete conversion of the heart to God, the most striking outward changes are only good in *this* world—they will avail us nothing in the next. "Fools' pence" will buy us decent and comfortable clothes for time, but they will not buy us "white raiment" for eternity. Let us do all things "as unto God," for no other motive will be really and everlastingly blessed. We must put off *worldly* good works when we die, and leave them to decay behind us; but what we do for God's sake, and from the influences of His Holy Spirit, shall "follow" us, and receive a just reward.

Let us diligently save, and wisely use our "fools' pence," but let us still more diligently treasure up, and profit by, the statutes and precepts of God.

ALLOTMENT FARMING.—May.

By this time our cottage and allotment friends will have their gardens in first-rate order; if not, shame on them, unless they have been unwell. "Through idleness of the hands the house droppeth through," says Solomon, and the

same may be said of the garden. Our clever friend Mr. Fish observes, in a recent number, "that an industrious and moral wife may be known by her two or three pet pot plants in the window," and just so an industrious and moral husband may be known by the condition of his garden, always excepting cases of sickness or infirmity.

Let us now address a question or two to the allotter and cottager. 1st. Have you sown your *Mangold, Swedes,* and *Carrots?* Have you secured a good supply of whatever *winter greens* are necessary? Have you availed yourself of the excellent cultural weather of the past, not only to bring all digging, forking, hoeing, &c., up to the day, but to have stolen a fortnight in advance on ordinary seasons? If you have not, pray consider your position, and blush. Now to the crops of the season, which we will treat of in the order of their importance to the cottager.

Potatoes.—Early kinds having been planted in February or March, will now be thrusting their heads through the soil, but do not suffer them. Let the soil between the rows be chopped or forked fine, and drawn over their crowns the moment they show. If covered about three inches in depth, they will not get through until the middle of May, which is as soon as we allow them to peep. Those who think they will secure an earlier crop by having them *above ground* sooner than ordinary practice, will, on the average of seasons, find themselves much mistaken, unless they can cover them at night. Later crops in drills, if the soil is anyways churlish, should be forked through when the soil is three-parts dry, in order to crush every clod preparatory to soiling them; a practice by no means to be dispensed with, if quality is a consideration. Towards the end of the month they may receive their earthing; and our practice is, on sound, upland soil, to draw it on each side, so as to leave a kind of trough in the centre to catch showers,—the trough and the shouldering being some ten to twelve inches in width.

Carrots.—The early Horn carrots have, doubtless, been thinned and cleaned long since; if towards the end of the month the grub takes them, draw them for sale or for eating as soon as convenient, and turn the bed to another crop. The middle of May is a capital time to sow a second crop of this kind; they will serve to pull all August, September, and October, and thus prevent any draw on the larger kinds for winter store. If the Altringham or large carrots have not been sown, let it be done immediately. If the ground unluckily has to be dug now, let it be done more than a foot deep, paring a little half-rotten manure into the bottom, and using a little of the drill compost, to get the young plant speedily out of mischief. The White Belgian is the heaviest cropper, but scarcely equal in quality to the Altringhams. Those carrots which were sown early in April will soon be above ground; and here let us observe, that no young crop suffers more from weeds or neglect of timely thinning. The young carrot is the most delicate garden seedling we have, and a sharp look-out must be kept for slugs. For modes of thinning and insect depredations, see advice in the sequel.

Parsnips.—A valuable spring root; nothing can be better adapted to promote an abundant flow of milk in cows than this root. It is especially useful in the months of February and March for early calves, when no grass can be had. It thus forms an excellent link between the turnips and the mangold, the latter of which should be kept well back for April, May, and even June. Those who sowed in March will now have a strong plant. Hand-weeding, singling-out, &c., must be instantly looked to, and after the hoe sent through them, cutting deep to within two to three inches of the plants. This has a tendency to fracture any side forks in their infancy, and thus induce the roots to grow long and clean. We thin at thrice; the first we term "singling-out," the second "setting-out," and the third "finishing." The first is merely pulling every weed, and so thinning the plants as that no two touch. At the second, we thin them to three inches, which is half the final distance; and at this period we run the hoe through, and remove every weed. They may now remain until near Midsummer, when all surplus roots may be drawn and used up, for, by this time, they have a nice root. After this, the final thinning, every weed being drawn, they will require no more assistance.

Mangold, Beet, &c.—If not sown, get it in directly. The young plant may receive much the same culture as the parsnip, only observing a greater distance, on account of more room being required. Of course, like most other crops, final distances must be ruled by the strength of the soil; we thin out finally at seven to nine inches, and at the second, or "setting-out," we leave them about three to five inches, that is to say, if sown continuously in a drill. We may here observe, however, that these things are better sown in patches, as our farmers do, dropping three or four seeds in patches eight inches apart. If the snail or slug attack them, those who have limited quantities may strew cinder ashes abundantly through them, with an application of quick-lime occasionally, at five o'clock, A.M., or before the dew is off them. Beet will succeed at half the distance of mangold.

Cabbage.—This, in the main, will be a secondary crop with all allotment men, as there exist two very good reasons why. In the first place, on the majority of soils, partial shade is beneficial to summer cabbages; and in the second, every inch of ground is, or ought to be, appropriated to crops of more importance by far than even cabbage, viz., root crops, which we have before urged ought to be the chief object. An occasional hoeing is of much benefit, soiling them well up the stem if the least suspicion of clubbing exists. Let a pinch of the compact kinds be sown monthly. Those who have a cow may try to get out a few of the Drumhead from a March sowing; we have known these produce good heads in October, when pastures fall off, and they serve to keep folks from their winter roots, for which there will be ample demand before the next May-day.

Broad Beans.—No more planting of these; it is too late for profit. Let those advancing towards blossom be well soiled up the stems, in order to provide against winds. Top them immediately a full crop has bloomed, and, indeed, somewhat before, if the fly should begin his tricks.

Onions.—Those sown in March will require, first, thorough hand-weeding, and next, thinning; in performing the latter process, be sure to keep the dread of the grub in view. Most writers advocate the liberal use of the small hoe, and, indeed, our market gardeners mostly practice it. We admit such, at first sight, to be in accordance with general maxims of culture, but we make the onion an exception. This we may observe, that previous to the omission of the hoe, we could seldom obtain a full crop, and that since we have first-rate crops. It was before observed that our onions are in beds, rolled when dry almost as hard as a road; the consequence is, that no storm can topple them over, and we hold it a great essential to avoid the latter circumstance. After a thorough weeding, we thin out to about two inches, and in another month or six weeks thin finally to about four inches apart. Those who aim at large onions will, of course, think lightly of this mode of culture; but we are assured, from long experience, that this is the most profitable way, for more reasons than space will allow us to point to. One we give; moderate-sized and early-ripened onions keep much better than those gross and late-ripened; and as we do not grow for exhibition purposes, we prefer the former.

Peas.—Of course the cottager's peas are all staked; little will now be necessary but to keep them well up, and to top them as soon as a full crop is set. This practice gets them sooner off the ground for autumn cropping.

Lettuce.—Let those who can find a bit of spare ground stick it full of the earliest spring-sown lettuces, only taking care the ground is good. These, if not wanted for the family, may be suffered to run to seed, and may be pulled daily for the pig during June and July. Those who have a litter of young pigs in the month of May, will find them most excellent weaning food—nothing gets young pigs on faster. It is scarcely worth the cottager's while to sow after the end of April until Midsummer has passed.

Runners.—Sow directly, also a few kidney beans in a warm situation.

Rhubarb.—Break off all blossoms as they spring.

Thus far as to the most important crops, but there are some other small matters which will readily occur without farther comment. One root, however, remains, and that a most important one—we had almost forgotten it.

The Swede Turnip.—The last week of April and the first in May are the best periods in which to sow this valuable winter root; that is to say, if to remain untransplanted.

Sow in drills from twenty to twenty-three inches apart, according to the quality of the soil. The seeds may be dropped in patches, about nine inches asunder; half-a-dozen seeds in each, not dropped too closely. As soon as the young plants "show," every weed should be drawn, and then the plants singled so that no two touch. In the course of three or four weeks after, the ravages of the fly will have proved them, if the fly appear; and now, on the first shower, all blanks may be made good, and the surplus plants thinned out, unless they are required for some other plot, when, of course, such must be proceeded with. The patches must be thinned finally to single plants, which will be about eight or nine inches asunder. Henceforward good hoe culture, and perfect freedom from weeds, is the point to aim at. Those who sow swedes in seed-beds to transplant, must be ruled by the time when the plants will be required. If the ground will not be at liberty until nearly August, why the bed need not be sown until the end of May, later than which is useless. We would by no means sow in rich soil for the latter purpose; plants thus produced are but ill qualified to withstand a July sun, accompanied with much drought. It is better to sow on rather poor soil; and where liable to the "club," by all means trench deep and bring up a little of the subsoil, unless a very barren material. We generally avoid "club" in all the Cabbage-worts by the latter practice. It ought to be more generally known, that the swede bears transplanting after it has formed a bulb in the seed-bed as large as a hen's egg. Indeed, we feel assured such will both make stouter plants betimes, and endure drought better, having a fund of stored-up sap to draw on. Let us, therefore, advise those who depend on transplanting swedes, to succeed early summer crops, as early potatoes, to sow rather early and thinly on poor soil—say in the middle of May. We sow in four-feet beds, making little drills across with the finger, at about four or five inches distance. This is far superior to the broadcast plan, as producing sturdier plants.

Transplanting.—Let us advise our readers to make a constant practice of dipping the roots of all things in puddle through the summer, whether wet or dry weather; the benefits are great. To this end the operator should always take a deep basket, with a little wet litter in, and a bucket half-full of dunghill drainings. When arrived at the seed-bed, he can put a spadeful of soil into the bucket and stir well, then dip each bunch of plants as they are drawn.

Seed Sowing.—It is oftimes difficult, in dry and bright summers, to get small seeds to vegetate, and precautions should be taken accordingly. Our constant maxim is, to water the soil thoroughly, previously to digging, forking, or drill-drawing. The succeeding operation then buries an amount of bottom moisture of a character to endure until rain comes. If, in addition to this, the seeds are soaked in tepid water for six or eight hours previously, they generally vegetate in a few days. Small seed-beds may be easily shaded with a little litter, but such must be removed as soon as the plants appear above ground.

Thinning-out.—When young crops are much too thick, and the weather is bright, the thinning should not be done at once, especially if weedy, for the sunshine frequently much injures their tender and partially-blanched stems. Better to draw all weeds first, then on a second occasion to rough-thin them, and on another to "single-out," and so on, as before noticed.

The Hoe.—This useful implement is generally most efficient, as to cultural processes, when the soil is three-parts dry. All weeds cut with the hoe should be raked clean off at each application; a round-toothed iron rake, the teeth about two inches apart, is best for this purpose.

Insects, Dressings for.—We shall find a mixture of new saw-dust and very fine cinder ashes a most useful application. We do not, however, wait until half our crop is devoured, but keep a heap always ready *in-doors*, and apply some to every suspicious crop the moment the seeds break the surface. Those who are troubled much with snails and slugs, will find it a good plan to place small patches of cut grass, here and there, round the suspected plot. When half-decayed, these vermin will flock to it, and must be collected either late in the evening or very early in the morning.

Watering.—Let there be no watering by "dribblets;" the maxim must be a good soaking or none at all. Slight waterings increase the leaf-action in the way of perspiration, without furnishing a corresponding vigour of root-action to sustain it; hence plants frequently "flag" more after slight waterings than before they had any. Never, however, water in such a way as to puddle the surface. When soil is liable to this, the watering must be done at two or three applications, waiting half-an-hour between each two. In drill-planting, it is best practice to fill the drills with water an hour or two before sowing.

Cleaning Processes.—Never hoe weeds in wet periods; it is worse than labour in vain, for it generally entails an injury on the texture of the soil, and cannot prove a *cleaning* process. During such periods there is nothing like the spade—dug in, they are done with. Let, however, anything like seed-weeds, if such should have been so disgracefully permitted, be pulled away first and burnt. And now let it be remembered, that what maintains one tuft of groundsel, chickweed, or any other gross herbage, will maintain a cabbage, a swede, or a mangold; and this is not all,—the damage they do by shading and choking the crops is very considerable. R. Errington.

THE APIARIAN'S CALENDAR.—May.

By J. H. Payne, Esq., Author of "The Bee-keeper's Guide."

Transferring Bees.—Notwithstanding all that has been said in The Cottage Gardener respecting the transferring of bees from an old cottage hive to the improved one, and the many instances there given of the total destruction of many of the stocks so operated upon, I am continually applied to for the best method of doing it, and I now repeat what I have said in all cases where my opinion has been given, *never attempt it*, for in many cases the stocks are at once entirely destroyed, and if not, are rendered so weak that they are of no value. Now, where a transfer is desired, allow the old stock to swarm, and put the *swarm* into the favourite hive, and immediately upon its being hived, put it upon the same stand, and in the identical position which the parent hive had previously occupied, and carry the old stock some two or three hundred yards away, as recommended by "A Country Curate," in page 26 of the present volume of The Cottage Gardener, and at page 12 of vol. vii., for by this means the population of the new swarm will be greatly increased, and the old hive for a time nearly deserted. Where a transfer is desired, I will venture to say that this is the only *safe* way of effecting it.

Bees in the North.—I shall feel much pleasure in receiving reports from those persons who, through my recommendation, may have been induced to place their bees in a northern aspect; but nothing can be more unfortunate for this experiment than such a season as this, not a single genial day to bring them out. My stocks in a greenhouse, and in a south aspect, have been carrying in pollen most profusely every sunny hour for a long time, and their population is rapidly increasing, whereas those in the north have scarcely made their appearance outside the hive. One advantage, however, I have been enabled to discover, which is, that they have consumed much less food than the others, but if early breeding is retarded (which it should be the object of every apiarian to promote) we shall not be gainers, but the reverse, from a northern aspect; however, it *must* have a fair trial.

Placing small hives, &c.—This must soon be prepared for, and I would recommend each glass to be furnished with small pieces of guide-comb, and set by in readiness, but not put on until the stocks show evident signs of want of room, and then the bees will commence working in them immediately; indeed, they will be filled with bees in an hour or two after being put on.

Ventilation.—I have found the best method of ventilating is to raise the small hive or glass about one-eighth of an inch all round, but not so much as to allow the bees to escape. The stock-hive, also, may be raised upon blocks or wedges half-an-inch when swarming is feared. Miner, in his *American Bee-Keeper's Manual*, recommends stocks to be raised half-an-inch from the floor-board all round, during the year, so as to allow egress and ingress to the bees at any part of the hive. This plan may, perhaps, be practised

during the swarming and honey-gathering season with much advantage, but in the autumn and spring, when robbing is going on, it would be ruinous.

Feeding.—If the cold easterly winds prevail at the time this paper meets the eye of its readers, as they have done for some time past, go on to feed all stocks that have not a good store of honey. Barley-sugar is the least troublesome for the purpose.

THE GOLDEN AND THE SILVER PHEASANTS.

(*Continued from page* 10.)

Complaints are often made, not merely that these pheasants, but all kinds of fancy poultry, *while suffering imprisonment in a small pen or aviary*, devour their own eggs as soon as laid. Thus:—"A friend here keeps gold and silver pheasants, but I fear there must be some mismanagement in his establishment, for he meets with many losses. He feeds them mainly on wheat, and, I suspect, gives them too much to eat; for it can hardly be good for birds that have so little exercise always to have highly nourishing food within reach. One of his difficulties is, that his golden pheasants eat their own eggs. I know no remedy for this."

Highly nutritive food of any *one* kind is not sufficient to keep an animal in health, or to prevent the manifestation of what we are pleased to call *a depraved appetite*, i.e., a longing after some unusual article of diet. Variety of food is the natural mode of supplying these requisite elements to the system. The apparently unnatural practices of incarcerated birds during their laying season may be, and I quite believe *are* caused by a temporary craving both for animal food, and also for phosphate of lime, without a continued supply of which the laying a large nest of eggs becomes a physical impossibility. The hen bird cannot *create* the materials which are to form her deposit. A little chopped boiled bullock's liver, and a few worms and insects, with plenty of crushed egg-shells or powdered oyster-shells, may be supplied to still the longing and put a stop to the propensity. It is a mistake to say that treating the birds with a feast of egg-shells is the way *to teach them* to eat eggs. On the contrary, it is the way to satiate and cloy them; just as the new boy, fresh put into the confectioner's shop, after he has been allowed to take his fill for a day or two, never afterwards looks upon a dish of sweets with his former greedy eye.

"However," continues my informant, "I would strongly recommend any one keeping pheasants in confinement, to place their nests in as secluded a spot as possible: thus, at all events, decreasing the chances of accidents to the eggs, and the acquisition of this bad habit."—*J. S. W.*

Such precautions are quite right to be taken, provided the *medical principle*, if I may so call it, is not thrust out of mind. For whatever eatable or drinkable is necessary for a creature's due performance of its functions, *that* may fairly be said to be its medicine. Therefore, let oyster-shells, calcined to a friable state in a kitchen fire, always be within reach of confined gallinaceous birds. Even in a crude condition they are given with evident benefit to poultry which have the advantage of ranging at liberty. A Cheshire clergyman (*W. D. F.*) has informed me that, "broken by a stone into small pieces they are invaluable, in this county, for all kinds of poultry, and I keep a largish stock. Mine consume about a score daily."

Now it should be remembered that the *degree* of craving which gallinaceous birds feel for various matters, and especially for phosphate of lime to swallow, may depend, in some measure, upon the geological character of the district which they inhabit, varying as there is more or less lime to be found upon the surface. The English counties most famous for poultry are *those upon the chalk*, Norfolk, Cambridgeshire, Kent, &c. The bustard, before its extinction in England, was most frequent, if not entirely confined to similar tracts. I am not aware whether observations have been made how far the geographical range of species is *conterminous with special geological formations*. The nightingale in Great Britain seems banished from the granite; the Cornish daw, on the other hand, is at present exclusively attached to those ancient rocks. It is known, however, that the indigenous geographic range of all the large gallinaceous genera is much limited. That of many plants is very strikingly bounded by the extent of the peculiar rock on which it best pleases them to grow. Thus, the Cornish heath, *E. vagans*, affects the serpentine: beyond it you will not find the plant in England; but light upon the serpentine in Italy, and again you find the Cornish heath. Capt. Sturt says, that whilst prosecuting his researches in the interior of the colony of New South Wales, he could not but be struck with the apparent connection between its geology and its vegetation. So strong, indeed, was this connection, that he had little difficulty, after a short experience, in judging of the rock that formed the basis of the country over which he was travelling, from the kind of tree or herbage that flourished in the soil above it. Now, it *may be*, that birds in their inmost hearts are as *home sick*, pine as incurably *for their native soil and their native climate*, as plants. Therefore, as we are not tender-hearted enough to send them home, we must bring a sort of artificial fatherland to them. Our present subjects are natives of Middle Asia, Northern China, and Japan. D.

ŒNOTHERA SPECIOSA.

Your correspondent, D. Beaton, in The Cottage Gardener for Feburary 5th, writing on Œnotheras, mentions the *Œnothera speciosa* as a very desirable plant for bedding, or for mixed flower-borders. I grow it in the latter capacity, and have done so for years, considering it as one of the showiest flowers that I have; it blooms all the summer. The plan I adopt is, when dressing the beds in autumn, to collect the strongest of the young rootlets or offsets, and plant them six or eight in a circle, with one or two in the middle, so as to form a clump or knot. The following season they blossom profusely. Now that these clumps are beginning to throw up suckers, I can supply him with two or three, if he should not have already met with any. But I want to call his attention to another Œnothera, more rare and showy, and of which he has not spoken. It is of exactly the same habit as *Œ. speciosa*, but instead of being *white*, is of a delicate *bright lemon colour*, and the flowers of the size of small tea-cups. It was given to me about ten years ago, by a lady from Chelmsford, but I have lost it, and have never seen the plant since. Could any of your readers inform me where it might be procured?

I cannot conclude this notice without expressing a hope that your Mr. Weaver will continue his description of our hardy herbaceous flowers. I have profited much by what he has written, and am anxiously waiting for another of his valuable articles.—S. P., *Rushmere*.

PLENTIFUL FEEDING OF POULTRY.

Poultry is, indeed, gaining a standing and a name in the country, and those who have given attention to its improvement have reason to feel proud that their useful fancy is likely to result in an end so beneficial. Poultry exhibitions promise soon to become as frequent as cattle shows; and fowls are taking the place among the stock of the country which *I think* they merit; for what other animal is there which produces so much food, in proportion to its size, as a hen does during the whole course of her useful little life. The decision of the Royal Agricultural Society to admit poultry to their show, will, doubtless, be responded to with pleasure by exhibitors of all ranks, while numerous local societies and exhibitions are about to be formed and supported with spirit.

In these days of improvement, it must not be forgotten by persons who keep fowls, either for pleasure, use, or profit, that such as are poorly fed, and badly housed, can never be either fine or productive. Abundant and varied feeding is found necessary to produce these results. Poor and irregular feeding can no more raise a fine, productive fowl, than it can a cow or a sow with the like good qualities. When cocks and hens have full liberty, they will pick up a great deal of food for themselves; but all who wish to arrive at excellence in breeding, will do well to bear in mind, that they must not, on any account, *depend* on this chance-kind of feeding, or allow it to take the place of the regular supplies.

Books and treatises without number have been written, containing instructions, good instructions, as to the *kinds* of food best for fowls, and I believe it would be difficult to find any good, wholesome food, which is *not* good for them; but the advice which I at present wish to impress on poultry-keepers, is—whatever the food, let them have plenty. At this season especially, when the hens require warmth and plumpness for hatching, and when we must remember that the young chickens have not only growth, but feathers to make, liberal feeding is even more necessary than at other times; the mother hens, particularly, should not be allowed to drag their chickens about, seeking for themselves and little families a scanty subsistence.

I will conclude by mentioning the feeding which my fowls get, not with a wish to dictate, or to make others, whose plans may be as good or better than mine, change, but because a comparison of management is often found useful. When the fowls first run out in the morning, they have as much corn of different sorts given to them as they can eat; that for the young chickens having been previously broken in a mill. Two hours after this, a small pan of porridge, with a little rice mixed in, is given to each brood of chickens, and (to prevent jealousy and robbery) a large pan of porridge is at the same time carried out to the old fowls; enough for them to peck at when they like for the rest of the day. This porridge is made of either rice-meal, barley-meal, or middlings, and is mixed either hot or cold, whichever may be found most convenient at the time. In the afternoon some more corn is given with potatoes, and any refuse from the kitchen that there may happen to be, and another little feed of corn at roosting time.

The fowls run out into an orchard for several hours of each day, and have besides a supply of green food. The young chickens are fed very often, and both old and young are gifted with excellent appetites. It must not be forgotten that the stimulus of a little meat is very important, and also that an occasional change to other kinds of food then these which I have specified, may be very beneficial to both old and young.

I will also take the present opportunity to advise, during the chicken-hatching season, that the hens be set on the ground. I have had more reason this spring than ever, to notice the superior advantage of a moist situation, especially for the process of hatching. In six broods, three cases in which the hens were obstinately bent on choosing a nest which was raised from the ground, one, four, and six chicks, respectively, were the result. Three which set on the ground produced, the first, nine chickens from ten eggs, and the other two (it was a sort of partnership concern) eighteen from nineteen eggs. I am led to enter upon these details from having heard repeated complaints from amateurs this season, of poor success with the early chickens. If the hens are set in a warm, moist place, and watched when they leave the nest to feed, I think the end will be generally more fortunate.—Anster Bonn.

BREAD MAKING.

The following method of making and managing bread has been practised for the last thirty years without a single failure; it appears to give less trouble, and to be open to fewer objections, than any other I have seen, and the bread is *invariably light* and good. The quantities here given are for a small loaf, and only need to be increased in the same proportion for any weight of bread. One pound of best or second flour; one tablespoonful of solid ale yeast; one gill of skimmed milk, with as much hot water in it as will make it warm as new milk in summer, and a little warmer in winter. Add the yeast to it, stirring them well together; then pour the mixture through a fine sieve over the flour, and work it well in with the hand till the dough leaves the sides of the mug and the hand without sticking to them; this, if actively done, takes from five to ten minutes, according to the quantity of dough. On finishing the kneading, put the dough at a distance from the fire to rise, near enough for the outside of the mug to be kept as warm as the mixture of milk and water, and not more. Cover it with a cloth, and in an hour-and-a-half or less it will have risen to show signs of cracking on the top; when it does this it is ready to be put into the bread tins, which should be rubbed over with butter or lard. Fill them half-full, and be careful not to use more flour in making up the loaves than will prevent the dough sticking to the fingers and board. Do it lightly and quickly. Cover the tins, and let the dough rise again nearly as long as before, till *half as high again* as when put in; at the same distance from the fire also. Prick each loaf with a fork as it is put into the oven, and *not sooner;* two or three pricks are enough for a small loaf. Have the oven a moderate heat, and about an hour-and-a-half will bake a loaf the size here given. The mug or pan used for kneading, and the bread tins, do better if made as warm to begin with as the dough should be kept while rising.

Observations on making Bread.—If milk cannot be had the same quantity of water must be used; the measure should be *exact*, as these proportions have been very carefully tried. The family sending this receipt have not found that milk dries the bread sooner than water, though it is said to do so, and much prefer using it. An ounce of butter to fifteen pounds of flour is an improvement. Salt may be used or not as preferred. If German yeast is liked, half the *weight* answers, as it is double the strength of common ale yeast. It may be well for young bread makers to know that too hot or too cool an oven prevents the bread from rising.

Experiments in making Bread.—Wishing to find out whether a smaller quantity of yeast than that above-mentioned would answer *equally well*, the following proportions were used in three small loaves, made with the same flour and the same yeast, and the same weight and measure of flour and milk. One loaf had the proportion above given, namely, a tablespoonful of yeast; another had exactly half this quantity; and the third had half the last quantity, which was a quarter-of-a-tablespoonful. These loaves were *equally light* when baked, and the only difference needed was in the length of time the dough took to rise. The last loaf required rather more than as long again as the first; the middle loaf half-way between the other two. These loaves weighed alike to a quarter-of-an-ounce, each weighing one-pound-and-a-half within half or a quarter-of-an-ounce. This experiment, and the well-known fact in chemistry, that fermentation once begun is certain to go on if the proper temperature is kept up, show that careful attention and scientific exactness meet nearly at the same point. It is, however, worthy of the notice of those who have time and qualifications for it, that kitchen chemistry is too little studied by those whose education ought to fit them for the skilful management of domestic affairs. Were it better understood there would be fewer failures in the simple process here described.—S

THE DOMESTIC PIGEON.

(*Continued from page* 409, *Vol.* vii.)

COUPLING OF PIGEONS.

When any one wishes to preserve his race of pigeons in all their purity, he must carefully watch the coupling of the males and females; in short, pair them himself. We have before remarked that it is the male alone which transmits to its posterity the characteristics of its species, at least, as regards *form*. We must, therefore, make him our first choice. When we have procured such as we desire, we seek a female for him; the more pure his race is, the better hers should be, but this is not so important as the other. The male easily couples with the female assigned him, but she does not always do so as readily. If this forced union displeases her, she constantly repulses the male. The tender caresses, amorous cooings, numerous turnings; all these weary and annoy her, and she returns all his forward advances with blows, until the lover, in his turn disgusted, changes his love into hatred, and his caresses into fury. Sometimes they may remain six months, or even a year, in this state of enmity, and the amateur is obliged to renounce his hopes, and set them at liberty to couple with others. Fortunately, these examples are very rare; it more frequently happens that after fighting for eight or fifteen days, they conclude by pairing and living happily together the rest of their lives.

The season has a great influence on the greater or less facility of the coupling of these birds. If, for instance, we reunite them in the spring, both hasten to contract an union. But, on the contrary, if we wish to couple them in the winter, or during the moulting season, in spite of all the trouble we can take, and the canary and hempseed with which they are excitingly fed, it often happens they at first neglect each other, that hatred follows, and in time produces an invincible antipathy between them. In order that the coupling may succeed perfectly, it is necessary to consult some suitableness of age and form. A very large female will feel great repugnance in coupling with a male of very small stature, unless she has chosen him freely. All obstinately refuse to couple with a male too old or infirm.

It would be very desirable to be able to practise the rule that we are about to give in this paragraph; but, unfortunately we cannot profit by it, without we wish to couple together two birds which have already set, and whose constitution we are acquainted with. Among the females one finds some that are very backward in laying, and others forward. When we discover one of these habits to belong to them we should give them a male accordingly. If we give a female that is forward in laying, a male that is too eager, as soon as they have coupled he will beat and torment her continually, pursue her with redoubled strokes on her head, prevent her quitting the nest he has chosen for her, and at last, after tormenting her, oblige her to lay. Thus hastened, her eggs are generally clear, that is to say unfruitful; or soft, the shell, not being formed; besides which, females in this case soon become subject to the swelling (see the article *Diseases of Pigeons*). If, on the contrary, you give to a backward female a sluggish mate, you will have no young pigeons until they are hastened by the heat of the season, and they will not lay more than two or three times in the year, going long between each brood. We should then, as far as possible, give a forward male to a backward female, and one of a mild character to a forward female.

If any confusion arises in the dovecote, the cause of it may generally be traced to their uncoupling. In the moulting season, in the months of August and September, the pigeons are seized with a sadness occasioned by this malady; females are very apt to be disgusted with their males, to such a point as to abandon them altogether, if great care is not taken to prevent it. As soon as the amateur discovers this uncoupling, he should take these two birds from the dovecote, confine them in a separate locker, and by captivity oblige them to couple again. It is necessary to observe that this locker should be out of sight of the dovecote pigeons; for if the unfaithful one can see from her prison the lover that has caused her to break the conjugal union, she will injure herself in useless efforts to rejoin him, and her antipathy for her mate will only be increased.

At other times, but more rarely, it is the male which forsakes his mate, in this case we must act as in the preceding. If, however, these birds have such a decided dislike to each other, that they do not couple at the end of some weeks, it would be necessary to renounce all hopes of their living together; we should then place them in the common breeding cage, and leave them to make a fresh choice according to their own inclination. If we fear their blending their race, we must choose a male and female for them, and couple them as one does those that have never been coupled.

There are frequently certain males which adopt two females at once; very great confusion arises from this, proceeding from the dovecote containing more females than males. If, on the contrary, the largest number is of the last named sex, the confusion is still greater; for they are always ready to trouble every family, by following the setting females even to their nest, by continually having obstinate battles with their mates, which necessarily occasions the eggs to be broken or clear. The amateur must, therefore, watch his dovecote with the most scrupulous attention, so as to keep as nearly as possible the same number of each sex. He will take away the surplus of males or females, and place them in an interior locker. We shall easily perceive when the coupling has taken place between two birds that we have shut up together by their caresses. We may now set them at liberty, or replace them in the dovecote with the others. They will immediately occupy themselves in constructing their nest, where the female will soon deposit two eggs.

Before concluding this chapter, we ought to describe the breeding-cage or locker of which we have spoken. As we have before said, there should be two of them; the inner one, in which we should place all those pigeons which may not yet be coupled; the young, as soon as they can feed themselves; the superabundant males and females; and, in short, all those whose coupling we would leave to chance. This breeding-cage would simply be a part of the dovecote, separated from it by a partition or wire trellis work. It is useless to say that, with the exception of the nests, it ought to be furnished with all the utensils of the dovecote, and kept as clean. The exterior breeding-cage, the express purpose of which is to be out of sight of the free pigeons, will serve to couple again those birds that have been disunited by caprice or any other cause. A small apartment may be made use of, or we may very successfully employ a large box for this purpose, the front of which must be furnished with a wire grating; in short, a simple wire cage, two feet wide and three long, will suffice for want of a better.

(*To be continued.*)

DOMESTIC PIGEONS.

TWENTIETH RACE.

Tumbler Pigeons (*Columba gyratrix*).—The birds of this class are very small, their flight irregular, rapid, and very high, and their movements precipitate; they turn over in flying like a body thrown up into the air; the eye is pearled, of a sandy red; it has rather a large filament round the eyes; their feet are naked; they very much resemble the *Carriers* in the eye and size, which has caused some amateurs to think they are only a variety of the same. In 1817, the English bought all they could find for sale in France. Nothing is more curious than to see them take their rapid flight; an arrow is not more swift at first; but, all at once, they begin to tumble five, six, seven, and even eight times following, exactly like a rope-dancer, from whence this race takes the name of the "Pantomime Pigeon." But this singularity, which causes them to be sought after by ameteurs, is also frequently the cause of their destruction. Sometimes carried away by the rapidity of their movements, they turn over until so dizzy, that they are deprived of the faculty of flying, they then fall, and rarely escape death in their fall. At other times, the hawk takes advantage of this moment to seize upon them; but, also, when a pigeon perceives its enemy in time, this aptness to turn in descending, as if it had received a mortal wound, gives it the means of escaping the fatal claw.

Mountebank Tumbler Pigeon (*Columba gyratrix gestuosa*).

The colours are varied, grey, red, reddish-brown, black, diversified with those different colours. Its form very much resembles the Stockdove, and it was formerly made use of to attract pigeons from other dove-houses, because it flies higher and further, and a longer time than the others. It

is also very fruitful. The most rough-footed are the most esteemed.

English Tumbler Pigeon (*Columba gyratrix Britannica*).—This is one of the smallest pigeons we know. It differs from the preceding in its size, which is almost one third smaller, also in its shorter and fine beak, marked on the extremity of the upper mandible with a black spot (in the streaked tumbler), or having all the mandible black (in the variety which has the plumage of this colour). Its strong and flat head, supported by a thin and graceful neck, rather resembles a partridge. Some of these pigeons are black, red, streaked with black, or a dun colour, with a more lively coloured breast. These birds are more rough-footed than the Mountebank Tumbler, and equally fruitful.

When these charming pigeons are crossed with species proportionable to their size, they produce very pretty mixtures; but the young ones of this cross never resemble either their parents or their kind.

Savoyard Tumbler Pigeon (*Columba gyratrix sabauda*).—It resembles the common carrier in its form; but its plumage is streaked, or rather laced over with white, grey, fawn, and black. It has a pearled eye, but of a sandy-red. It is very productive.

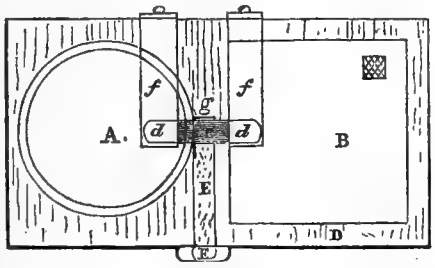
(*To be continued.*)

HOW TO OBTAIN THE LARGEST AMOUNT OF HONEY.

I am happy to see that the apiarian is by no means forgotten in your instructive pages—so much so, that though I have aspired to that distinction these fifteen years and more, and added to my own observations the learning and research of many others, yet I confess great obligation to your correspondents. If the communication of a portion of the result of my own experience, imparted as a tribute of gratitude for these benefits, shall be deemed worthy a place in your columns, here it is at your service.

Let the problem be, how to obtain the largest amount of honey in any one year from a colony of bees, with the smallest amount of injury to the hive. Your correspondent, "A Country Curate," would say, let them swarm, and take the proceeds of the swarm at harvest-time. This may be well, although my experience does not tally with his about the more *prolific* character of the older stocks. Be this as it may (for I am not contending with so able a master), still I presume no one will repent giving the following plan a trial:—

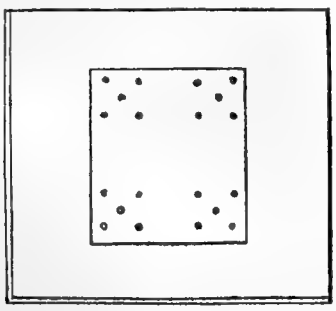
Fig. 1 (*Ground Plan*). *Back.*



Front 2 ft. 9 in.

A. the hive.
B. the box.
C. the tunnel (the *horizontal* lines mark the subterranean part).
D. bottom board.
d. d. the *exits* of the tunnel.
E. *common* entrance (*subterranean* part shewn by *dots*) communicating with the tunnel (C).
f. f. slides for interrupting the communication by closing *d. d.*
g. the top of the tunnel (C) moveable for cleaning.

Fig. 2.



Moveable top of *box*, the *holes* marked by the circles.

First of all, prepare a solid bottom board 2 inches thick, 2 ft. 9 in. long, and 1 ft. 5 in. in breadth. In the centre of this let a passage be hollowed out, so that two adjacent hives may have a sort of tunnelled communication between them. This hollow passage is to be covered with a flat moveable roof, kept level with the surface, so that all may be level except where the passage (C) makes its *debût* into each hive. A means must be contrived by a slip of tin, or otherwise, as suggested in the figure (*f. f.*), for cutting short the communication, which must be kept closed at certain times. Then, having selected a populous hive of last year's swarming, substitute one end of this prepared board for its former bottom board, and on the other end place a wooden box, open at top and bottom, 11 inches square in the clear, and 9 inches high, with an observation window at one side; cover it with a thin square board, fitting closely, yet unattached, pierced with sets of holes for the free passage of the bees into any hive or glasses that may stand above, and furnished with a good piece of guide-comb.

All this should be ready early in May, and be protected from the weather till the bees in the *hive* (not yet allowed to pass into the adjacent *box*) appear to be preparing for a migration, at which time take a favourable opportunity at eventide, when the bees are all at home, to raise the hive carefully from its place, and lift it on the square board at the top of the adjacent box. Stop the entrance of the *hive*, and move the bottom board a little to one side, so that the entrance of the *box* may just occupy the position of the former entrance, lest the bees should lose their way. The bees next day will not hesitate to go out and in through the box, and very shortly, instead of swarming, they will commence operations therein, which they will seldom do without this arrangement, which I consider my "*chef d'œuvre.*"

When they have evidently done this, and built their combs some distance down, no time must be lost, but the hive must be shifted back to its old place, and the *holes* thus left exposed at the top of the box must be carefully covered (this I generally do with *halfpence*). The communication in the *tunnel* must now be opened, that the bees may pass to either hive, or from one to the other, *ad libitum.*

I have a contrivance, by-the-by, on my bottom board for a *common* entrance, communicating with the *centre* of the tunnel. The other entrances (viz., of the hive and box respectively) I close or leave open according to circumstances, always *closing* them, however, *at first*, to get them accustomed to the common entrance. If you have been alert, your queen will not have entered the box before this removal; if otherwise, you have been so far unsuccessful, and must work your glasses; but if she have *not*, she is not likely to come now through the subterranean tunnel, particularly if you keep the box sufficiently cool (which there are varieties of ways of doing) before they separate from the parent hive. In a good season the bees will fill two such boxes as this, besides a glass or two on the top of the parent hive, and as many glasses as you please on the board above the box, and your parent hive will remain in "*statu quo.*"

Should any further information be required on this subject, I shall be happy to supply it in reply to any enquiries.—A Country Vicar.

NATURALIZATION OF FOREIGN SONG-BIRDS.

I rejoice to see the pages of The Cottage Gardener diversified by occasional observations on our favourite songsters of the woods. The preservation and encouragement of these is an object of great importance to every lover of nature, who must see with regret, if not the total destruction, yet the increasing rarity of many species of interesting birds formerly common in this country. Where we have introduced a new variety, it has hitherto usually had a reference solely to our game preserves. Our gardens and woods are annually enriched by the exotic plants and trees of all climes; cannot we go a step farther, and naturalise among us some of the *songsters* of other countries? Experience has shewn that canary birds may, with the returning spring, be let loose in pleasure grounds, where they will breed readily in fruit trees and shrubs, disporting and carolling with exquisite effect on a lawn, or in a shrubbery. But this liberty with the canary extends only to the warm months, after which the birds and their young are glad to

return to the shelter and warmth of a room or aviary, from which their supply of food had all along been chiefly derived. There are, however, other foreign songsters quite hardy enough to stand our out-door climate throughout the year. I will confine myself at present to one kind only—the *Loxia cardinalis*, commonly termed amongst English bird-fanciers the Virginian Nightingale, or Cardinal Grosbeak. It is found in various parts of the United States, where, as Wilson in his American Ornithology informs us, it is an especial favourite, under the term *Red-bird*, frequenting bushy ground, particularly near water, with many of the habits of our blackbird and thrush. In size it is almost the same as these, existing on corn, seeds, fruits, worms, snails, and the larvæ of insects. A friend of my own, many years a resident of Virginia, informs me this bird may be seen in its native woods when an occasional much lower degree of temperature prevails than is ever experienced here. Its song is excellent, and continues during eight months in the year. In plumage it is nearly a bright scarlet, of which in our native birds we have no instance, so that our woods would at once receive, in such an exotic, a pleasing novelty to the eye and the ear. The female, though differing in plumage from the male, is nevertheless extremely graceful and beautiful, and she possesses the unusual, if not unique, accomplishment of a song equal, or I might almost say superior, to that of her mate. In my own (cold) conservatory a male specimen of the Virginian nightingale has been in uniform health for nearly four years; but it was only in April, 1851, that I succeeded in procuring a female. They paired soon after, and three nests resulted before the autumn, the eggs being of a dusky white colour. The favourite place of building was a large dwarf box plant, in a pot, the nest being constructed of hay, twigs, pieces of bass matting, and bits of paper, or dry leaves. The male was frequently heard to sing before daylight in the last February, and the pair are at the present moment again occupied in the work of nidification, amid incessant jugging, a box-tree being once more selected for their operations. It may be well here to observe, that these birds are, by their active habits, unsuited to the constraint of a close cage, in which they are extremely pugnacious, and frequently die in a short time. In a large airy room, or conservatory, I believe no bird will be found more docile, or to breed more readily, the convenience being supplied of some bushy evergreens, at the same time varying their aliment, especially after hatching, when a little boiled egg and insect food are useful.

But to return to my main object—that of shewing how readily this lovely bird might be naturalised in Great Britain. Let a few pairs be turned out in the spring, as soon as the trees and hedges afford a leafy shelter and screen from enemies, and success is, I think, certain, where the locality is secure from molestation and depredators, as in numbers of our parks and ornamental grounds. We have heard of the proffered reward to the inventor of a new pleasure; have I not suggested one? and one, too, that might be realised at a cost trifling indeed in comparison with the sums frequently squandered in far less rational and interesting objects. Let us imagine for a moment the addition to the scenery in Windsor Park, and Virginia water, of the plumage and carolling of an enchanting new songster like this, which would in such a locality find a secure home, and become thenceforth a denizen of the forest. Specimens of this bird may often be seen at the Pantheon, in Oxford-street, London; or in the possession of the importers of foreign birds, amongst whom I believe one of the principal is Mr. W. J. Marrott, 54, King William-street, London Bridge. In stocking a domain, it is recommended that the females should outnumber the males, to avoid the fierce and sometimes fatal conflicts of the latter. Moreover, it would be well not to rest satisfied with one year's importation of the birds, but to repeat it in the succeeding spring, if practicable. In carrying into execution the scheme I have been pointing out, let it be observed, we are but following the example of an English proprietor in America, who gave instructions to one of our dealers to send him out, during several years, twenty to thirty pairs of blackbirds and thrushes, to remind him, in his adopted woods, of the feathered songsters of his early days at home.—Henry Taylor.

[We like this suggestion much, and shall be obliged by other communications on the subject.—Ed. C. G.]

PEAR-TREES FROM LAYERS.

Having read at times of fruit-trees from cuttings, and having tried that mode of propagation without success, it struck me last spring that they might grow from layers. I accordingly brought down two shoots of a pear-tree, and layered them the same as a carnation, and on taking them up in December, one had made a good mass of roots, but the other had only showed symptoms of rooting, yet from its appearance would have rooted this summer. I have no doubt but pears, and also apples, might be propagated on this plan with good success, were dwarf trees kept for the purpose.—Wm. Salcombe, *Sussex*.

ROOT-PRUNING LARGE FRUIT-TREES.

In looking over one of your numbers, a short time since, I noticed one of the writers has his doubts about root-pruning large trees. Now, to remove that doubt, I can state that I have root-pruned four large pear-trees with good success. One which I so pruned in August, 1850, was covered with breast-wood from one to two feet long, and the day after the operation the shoots flagged very much. These were soon cut back, and since then the tree has not required much pruning, but is now covered with fruit-spurs, and last year had a good sprinkling of fruit on it, and looks as healthy as I could wish. In fact, it answered the purpose so well, that I was induced to root-prune the other three last summer. These trees are about twenty years old, growing against a wall, making very much wood annually, and bearing little or no fruit. They did not throw up so much wood last autumn. But how it will act as regards the future crop of fruit, time alone must prove.—Wm. Salcombe, *Sussex*.

TO CORRESPONDENTS.

***** We request that no one will write to the departmental writers of The Cottage Gardener. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"**

Enclosed Heath Land (*J. H.*).—Two acres of your light heath soil, properly managed, should keep your cow and pony. If the subsoil is really marl, that is, has some chalk mixed with the earth, you cannot do better than have some of it brought up by trenching, and mixed with the surface soil. What you require in your ground, if we correctly remember the soil about East Grinsted, is a stronger staple, and, to give this, chalk and clay will be the best application. When you have got the ground into proper order, we should divide the two acres into three parts; one acre to grow roots, half an acre for lucerne, and half an acre for grass, to be sown with grass seeds specially suited for such a soil. As for the time of sowing the root crops, &c., consult our "allotment" monthly papers. If you require specific information on any point, write again.

Egg-eating Hens.—A correspondent (*G. H. Smith*), says:—"I felt very much surprised at Anster Bonn recommending beating hens with a switch to cure them of this habit. Perhaps you will give my advice. Having kept fowls for a number of years of different varieties, in confinement, I have always found it necessary to give them a sufficient supply (daily) of (egg shells) phosphate of lime, they cannot lay eggs without it. I never have any eat the eggs, although kept in aviaries, some of them only 10 ft. by 6 ft.; and where they will lay *abundantly with proper food.* I often leave a dozen or more eggs in the nest at one time, and they never interfere or break one. It is a *craving* for the components of *egg shell*, pulverised bones, calcined oyster shells, or, indeed, *milk* mixed with barley-meal; for any of these will answer the purpose. A young child finds sufficient in its mother's milk, and the milk of the cow, to make bone and muscle. You cannot produce any of the large varieties of fowls—Cochin China, Dorking, Spanish, &c., from full-grown stock birds, without giving your chickens *plenty* of the above, or they will *never* reach anything like the size of the parent stock. I have known this for years, and you will find the Rev. Mr. Dixon strongly recommends it. Fowls require *seeds* or meal, *grass* or greens, and *worms* or meat. I get about two pounds of greaves, or meat paunches, and boil them well, put into the broth two or three cabbages, or turnips in winter, and thicken it with barley-meal. You can feed fowls cheap and well upon this, their necessary food, with a little dry barley occasionally.

[It is a great mistake to suppose that there is much phosphate of lime in egg shells. In 100 grains of them, 97 are chalk, (carbonate of lime), and only 1 grain of phosphate of lime and magnesia.—Ed. C. G.]

Removing Trees.—A correspondent, (*C. S.*), writes as follows:—"Your correspondent, 'Novice,' at p. 27, asks 'whether a tenant can remove trees?' and you reply, 'the law is, that no trees can be removed without the consent of his landlord.' Such was formerly the impression

I had of the law, but not so now, or I should not have planted so many valuable shrubs and trees for the benefit of such a landlord as mine. In Michaelmas, 1832, a case was tried, *Cooke* v. *Anderson*, which decided the right to remove shrubs and trees, which had been theretofore the cause of much dissension between tenant and landlord, and as an act of individual spirit, the defendant in this action is entitled to the public thanks. The right of tenants in such cases was established as a warning to overreaching landlords."—We are much obliged by this communication, but we should be still more so, by having a reference to the book in which *Cooke* v. *Anderson* is reported. We believe the law is as we have stated it, and *Cooke* v. *Anderson* must have some facts entitling the tenant to an exception from the general rule.

Cure for Warts.—*J. K. T.* says:—"In No. 181 is noticed the Ranunculus arvensis, or Common Crowfoot. There is one very useful property belonging to this British plant, which I do not think is generally known, and which I should like to see recorded in your valuable publication. On breaking the stalk of the growing plant in two, a drop of milky juice will be observed to hang on the upper part of the stem; if this is allowed to drop on a wart, so that it be well saturated with the juice, in about three or four dressings the warts will die, and may be picked off with the fingers. It is the most certain remedy I ever saw, as I have seen people, whose hands were nearly covered with them, cured in a few weeks. I have also removed them, by the above means, from the teats of cows, where they are sometimes very troublesome, and prevent them standing quiet to be milked."

Rhubarb Wine Bottled, and not Fine nor Effervescent (*A New Subscriber*).—This should be laid down in the cellar; a few years age would very probably improve it. A bottle should be opened occasionally, for examination. The wine made last May, which shows a gravity of 11 on the glass saccharometer (which being multiplied by 5, shows 55, *the real gravity*), should be brought up into a warmer room, stirred, and thus encouraged to ferment. It should be tested daily, and when the scale on the glass instrument shows that the wine has been attenuated to 8, let it be again cellared. When it has been further reduced to 6, stop the fermentation, and proceed as directed in vol. iv., treating the wine exactly as if it had been made this year, not bottling, of course, until next March. With respect to *Roberts's Saccharometer* not being procurable—again I must say, "Read your book." I stated some time since that these instruments may be bought for 6s., and tin case a trifle extra, through Messrs. Black, Edinburgh, or Whittaker and Co., London, publishers.—W. H. Livett.

Flower-bed Plans (*J. S.*).—There is no modern work devoted to this subject. You can have the two first volumes of The Cottage Gardener bound in one, and covers for the other volumes, by applying at our office, 2, Amen Corner, Paternoster Row. Other question next week.

Gulls (*Rev. R. M. E.*).—These certainly eat slugs, though they prefer worms.

Weigela rosea (*Ibid*).—It is quite hardy, and may be planted out at once. It grows to the size of the Scarlet Ribes; at least, we would allow it the same space. The *Cantua dependens* and *Escallonia macrantha* might now be sold for a shilling each, but the exact price we cannot say. *Anemone japonica* and *vitifolia*, *Pentstemon azureum* and *cordifolium*, *Phlox verna* and *nivalis*, *Coreopsis lanceolatu*, and *Cineraria maritima*, would suit you, besides many others we have named often. Try and get the *Lithospermum rosmarinifolium*, as you have so fine a climate; and we shall keep a look out for other things that will be treasures to you.

Potatoes left where Grown.—*J. K. T.* says, "Your correspondent, Mr. W. E. Howlett, in his article on leaving potatoes in the ground during the winter, and digging them up as they are wanted for use, must bear in mind that last winter was one of the driest on record, and, consequently, very favourable for his plan; but had we a very wet winter, such as we frequently have, the potatoes would have been as waxy as possible, and many of them probably have rotted in the ground. Another great disadvantage of this plan is, that owing to the late digging-up of the potatoes as they are wanted, often in very wet weather, it leaves the land in such a state that no early crops can be got in; for land that is naturally heavy, once dug in wet weather, will take nearly a summer to get dry."

Cats.—*J. K. T.* observes, "These are the greatest nuisance that a cottage gardener has to contend with. I have very frequently had a whole bed of choice seeds scratched up by them in one night, therefore I am obliged to use defensive measures. My plan is to get a mouse, or a bird, open it, and put as much strychnine as will cover a sixpence in it, and put it where the enemy comes; and it will never visit you the second time." (Strychnine is a virulent poison.)

Growing Geraniums.—*A. B. C. D.* asks our opinion upon this mode of growing them:—After the flowering season is over, I cut my plants down, and feed them with guano-water until they are well broken out; then I fresh pot them, and keep them close for awhile to recover. I give no more manure-water to them till the latter end of February, then I make use of the guano again. In March, I top all the shoots, using the guano-water rather often, until I have them to break out again, the same as the specimen sent; then I intend to withhold the manure-water until the blossom-buds appear, and give them a little more after. I have about 40 plants in 6 and 8-inch pots, with from 20 to 30 such shoots on each as the one sent; they are from 9 to 12 inches high from the rim of the pot, and 18 to 22 inches through." Like the proof of the pudding, you have shown us that your system is good and sound practice. The only thing we see objectionable, or rather, superfluous, is giving them strong water immediately after cutting them down. The shoot sent was very healthy and robust.

Flower-Garden (*A Constant Subscriber*).—How unfortunate you did not comply with our rule, for your terrace geometric garden is remarkably well laid out, and very easy to plant. If the centre of the house had been opposite the central walk, the whole would be the most complete arrangement we have seen; all that we can say is, to keep the scarlets, yellows, and whites, in the outside-beds; let No. 1 group on each side be of the same plants, and keep the blues, lilacs, and purples, in the triangles No. 2.

Elm-tree Bleeding (*G.*).—Forsyth's composition is the best we know of for stopping the bleeding of the elm-tree, but it should be applied when the sap is at rest. We have often cured such wounds as you name with it, but perhaps some kind reader may let us hear of a better remedy. The composition is made with fresh cow-dung, wood-ashes, and old lime, in the same proportions as they mix lime and sand for builders' mortar, at least, that is the way we always made it; when this gets dry, it often cracks, but a second *slight covering* will set it as hard and close as plaister, and it will last many years.

Coral Plant (*C. E. R.*).—This beautiful plant (*Erythrina cristagalli*), is well suited for planting against the south side of a cottage or castle, but it requires a slight covering over the roots in winter, such as any of the new fuchsias want. The stems die down yearly, after blooming, and it is very easy to save the roots; a little heap of coal-ashes would answer as well as anything.

Single Dahlias (*B. B.*).—We never heard if Mr. Beaton's suggestions respecting the *Beauty of Thetford* dahlia were acted upon; and we have heard nothing about them or *Zelinda* since.

Budded Roses (*A Subscriber*).—Your question has been answered lately by Mr. Appleby. It is best not to cut away a small portion of the shoot beyond the bud until the first growth is about finished—say to the beginning or middle of July. Leave six inches or so of the old shoot, and tie the young shoot from the bud to it as soon as it is fit to handle.

Flower Garden (*Bertha*).—A very prettily laid-out garden indeed, and the planting judicious, except the Golden Chain geranium bed, which will be too low for that part of the garden. We would plant it where you intend the pentstemons; move these to the purple petunia bed, and put this petunia where you have the Golden Chain. The composition would still be the same as you propose yourself. This change will put the lowest plant and the richest foliage next the windows, and be a rich foreground to the picture. You are fortunate in having so many of the Golden Chain; but plant them as thick as your stock will allow.

Joslin's St. Alban's Grape.—*J. Murdoch* says—"You lately enquired of your readers to inform you what they knew of the Joslin's St. Alban's Grape. I have for these last three years grown it in pots in juxta-position with the Chasselas Musque, and neither I nor any of my friends could ever perceive the least difference between them. The mature wood of both is a bright brown; their leaves of medium size, rather hard, without the least down, little or no lobe, but regular serrated; the berries perfectly round, and, except fully exposed to the light, or allowed to hang long on the vine, of a greenish white, and prone to crack if over-watered when getting ripe. It was a sad mistake of Mr. Thompson when he took it for a new variety, for no one will accuse him of lending his aid to gull any one; but grapes grown under different circumstances often assume altered characters. For instance, the old Black Hamburgh is said to be round, and Wilmot's has the appearance of being beaten with a hammer. This latter circumstance made a person exhibit as Wilmot's, at the Horticultural Rooms, one October, grapes which I had seen during the summer growing on vines I tended thirty years before, and which were then of a good age." An answer to your question next week. The Browallia was gratefully received.

Bees.—We agree with *A large Devonshire Bee-keeper*, when he says:—"We should like to see, through the pages of The Cottage Gardener, this year, instances of early swarming in different counties of England. Also, statements of the largest quantities of honey taken, and under what system. We rejoiced to see such kindness manifested to the author of *The Honey Bee*, by his neighbours sending him some stocks of bees. We should be very willing to give him some, but the distance prevents. We admire his work, and his excellent lecture on the management of the honey-bee, delivered when he was 70 years of age, and the first lecture ever delivered by him." We think "A Country Curate" was right, at page 38, as to the cause of *bees forsaking their hives*, which in your neighbourhood this year has been of very frequent occurrence.

Blue Gentian (*B. B.*).—We are not aware of any new species in this genus. The stemless gentian is the best of them, but it only blooms in April, the rest are only fit for mixed borders. We have not a sufficient number of hardy plants fit for bedding, to carry out a constant bloom for the whole season, with only a few exceptions. All our herbaceous plants last no longer in bloom than annuals. Where can our correspondent obtain a good *nightingale?*

Gardenia Shedding its Buds (*Tirydail*).—You do not say what species. If it is a species requiring stove culture, see what is said about *G. Stanleyana*, at page 36.

Transplanting Mangold-wurtzel (*A New Subscriber*).—There is no doubt, that if done carefully, and whilst the plants are young, Mangold-wurtzel may be transplanted safely. It is a good plan to fill up any gaps in the rows by this mode, but the untransplanted are usually finer than that transplanted. You are quite right in saying that *greaves* are not suitable for *fatting* fowls, nor is any animal food good for them then, as it makes their flesh unpleasantly strong-flavoured.

Spanish Fowls' Eggs.—The correspondents who wrote for these, may apply to Mr. Edward Wort, Knockholt, Sevenoaks, Kent.

Small Greenhouse (*Hebden Bridge*).—Who could tell the cost of erection without knowing the dimensions? If you buy our number 109, you will find full particulars and plans for one that was built for £5.

Horse-hoe (*J. B. H.*).—You may have this to hoe between rows of Lucerne nine inches apart. Any agricultural implement maker will send you price, &c. Hand-hoeing would serve your purpose best, unless you have a large quantity.

Exchange of Plants.—Mr. William Jackson, of Mansfield, Nottinghamshire, and Mr. John Battersby, of the same place, will be glad to

exchange plants with Mr. Bridger. If you send the flowers to our office, you will have an opinion of them given by a competent authority, but not by Mr. Glenny.

Wild Bees.—*An old Gardener* wishes for information "how to eradicate wild bees, of which large swarms have taken entire possession of a turf-bank in a small garden, on which they have undermined and destroyed the turf; and are now extending their destructive subterranean work to the adjacent lawn." We never heard of such a case before. We should put a little spirit of turpentine in a bottle, and thrust the mouth of the bottle into the opening to each nest at night, leaving it there until morning. This kills wasps. Did any of our readers know of a similar case?

Hard Water (*M. C. E.*).—You may safely use it to all greenhouse plants, after putting one ounce of carbonate of ammonia to every sixty gallons, and allowing it to stand in the sun or any warm place for twelve hours. This will only cure hardness arising from the presence of some salts; but the most certain mode would be to mix with the above-named quantity of water a quarter of an ounce of *oxalate of ammonia*. Putting *salt* into your cold pits was good for killing slugs, but it would absorb moisture from the air, and promote the damp which injured your verbenas. The salt would not cause the paleness of your geraniums, we think.

Rabbit Fattening (*Gardenia*).—They fatten best on oats and carrots—a portion of each. A rabbit is best from four to six months old, and requires a month to fatten. One cock *bantam* is sufficient for five hens; get rid of the other two. If your *soil* is light as well as poor, give it a dressing of clay and stable-manure; if heavy, give a similar application of road-drift, coal-ashes, and stable-manure.

Heating Small Greenhouse (*T. F.*).—The hot-water pipes should run along the *front*, and, as the door is in the centre of the front, be sunk in an open bricked space; but as the house is small, perhaps passing the pipes along the back of the house may do. You will have sufficient light and ventilation for your purpose.

Gardener's Place (*Pluto*).—You had better advertise for one.

Poultry Eating Eggs (*F. W.*).—Their having had egg-shells to eat did not teach them the bad habit. If giving them abundance of limey matter, and a change of food, does not cure them, there is no help; you must get rid of them. If you do not give them animal food at all, give them some greaves; if you do give them animal food, then cease to do so, and give them more green food.

Syringe (*J. S. Stoke*).—You will find plant-syringes at all dealers in hardware; one is as good as another.

Cochin-China Fowls (*Incubator*).—It is quite possible to find *some* Polish fowls that will be more profitable than *some* Cochin-Chinas; but if they are fed alike (and they *certainly* consume equal quantities of food) we are quite sure that the *best* Cochin-Chinas will surpass the *best* Polands in the number of their eggs; and you quite forget the high price that the Cochin chickens fetch, when compared with those of the Poland. The gentle habits of the Cochin fowls, and the ease with which they are kept within a fence not more than three feet high, will also give them a preference in the estimation of the amateur. We shall be very happy to publish the results of your own experience.

African Plants.—*M. B.* has seeds from Africa, with these names—*Bamea* or *Ochra; Kashbur; Sant; Hubb Aziz*. Can any reader kindly help us to the botanical names?

Cochin-China Fowls (*F. D. H*).—It is certainly *a great fault* in your Cochin-China chickens, that of having a fifth toe. The parent birds (although without the fifth toe themselves) must have sprung from birds which have had a cross with the Dorking, and now throw back to that stock. If I mistake not, you will also find, as the chickens fledge, that they will show too much tail. The Spanish should be *quite* white in the face. I have been told that those which are red the first year may become white the second, but this I have not noticed myself.—Anster Bonn.

Gapes in Poultry (*A Hertfordshire Lady*).—The "gapes" is a very troublesome and dangerous complaint among chickens. As you justly observe, prevention is better cure, and as this proceeds, I believe, from cold, it is advisable to shelter the coops from the east wind so prevalent just now, and also from wet. When placed in the warm sunshine, they especially require this protection. In an early stage of the complaint, cure is not hopeless. Hold the beak of the chicken open, and clean the throat well with a feather dipped in oil; let this be done every morning, and give occasionally a small pill of Barbadoes aloes. It is needless to add, that the little invalids must be kept warm.—Anster Bonn.

Cochin-China Fowls (*E. Dingle*).—I have known Cochin-China fowls' eggs hatch at various times, between the nineteenth and twenty-second, or even twenty-third days, and a correspondent of The Cottage Gardener mentions some which came as late as the twenty-fourth. In unluckily getting no chickens from your 54 eggs, you are not alone, for many have complained of the same mischances this spring. The chicks dying in the egg-shell, may arise from various causes; from some fault in the parent birds; from the eggs having been stale; from want of warmth or steadiness in the sitter; or from sitting them in too dry a situation. I have not found this happen more frequently with Cochin-China than with other kinds of fowls. I consider eight months old too young to breed from.—Anster Bonn.

Names of Plants.—(*X. Z.*).—No plant reached us with your note. (*H. B., Kingsbridge*).—*Thomasia quercifolia*, a hardy greenhouse plant. (*C. H. G.*).—1. *Pittospermum ferrugineum*. 2. *Teucrium fruticans*. 3. *Cineraria macrophylla* of "The Cottage Gardeners' Dictionary." 4. *Tecoma capensis*. 5. *Malva creana*. 6. Did not reach us. (*A Learner*).—Yours is that rare plant *Ranunculus parnassifolius*, worthy of a place in every collection. It arrived as a specimen ought, with its root, leaves, and flowers in good order.

CALENDAR FOR MAY.

ORCHID HOUSE.

Air: now that the days have lengthened, and the sun obtains much power, air must be given liberally. If the house is built, as we recommended, facing east and west, the sun will have great power early in the morning, and late in the afternoon, and therefore air must be given accordingly. Baskets, examine weekly, and such as are dry give a good steeping in tepid water. Catasetums, Cyrtopodiums, and plants of similar habit, will now be growing freely, and should be as freely watered at the root, care being taken that no water lodges in the hollow of the young leaves. Dendrobiums, and any other plants in flower, should either be removed to a cooler house till the bloom is over, or be placed at the coolest end of the house, and more air given there; but they should be removed into their growing quarters till they have formed the new bulbs. New Plants, such as have just been received from abroad, should not have much water or great heat till fresh growths are commenced. Heat: during this month the greater part of the plants will be making rapid growth; the heat must be kept up to the maximum. Moisture must also be plentifully bestowed upon the internal air; wet the walks, walls, and pipes, two or three times a day, especially in the morning and afternoon. Insects, such as snails and slugs, will abound; destroy them diligently. It is a good practice to look in upon them in the evening, with a lamp or a candle; they may be probably found at their work of destruction. Potting, if not finished last month, should now be completed; let the weeds be all drawn up, for they will grow even in an orchid-house. Shading, apply daily when the sun shines. Syringe: this will be in constant requisition, especially for plants growing on blocks. Water, at the root, bestow liberally to all growing plants, but withhold it gradually as the bulbs arrive at maturity.

T. Appleby.

STOVE PLANTS.

Achimenes, attend, with support for the weak-growing; give freely plenty of water to those advanced in growth; pot the last batch this month. *A. picta* is a fine species to bloom in winter. Air, give liberally to keep down at minimum point the internal atmosphere. Baskets, if any are used for drooping plants, should be taken down frequently, and dipped in tepid water. Cuttings of stove plants: the plants will now be making young growths, and these make the best cuttings; take them off, and put them in sand in heat. Gloxinias and Gesneras, repot, and syringe every day. Ixoras, specimens, tie out; young plants place in dung-heat, to encourage rapid growth. Gardenias, now in flower, remove into the greenhouse, to prolong their blooming season. Heat, keep up to the maximum, 70° by day, 60° by night. Moisture to the air, supply liberally by flooding the walks twice a day; Oleanders, place in pans of water, to cause the blooms to open freely, and encourage growth. Syringe: use this instrument freely every fine day, avoiding such plants as may be in flower. Potting: continue to repot young stove plants, to bring them on in growth. Weeds: let none appear beyond the seed; keep everything tidy, and neat, and sweet, in order to render the stove attractive and agreeable.

T. Appleby.

FLORISTS' FLOWERS.

Auriculas and Polyanthuses, shade, and keep well supplied with water; pot seedlings, and sow, if not done last month. Carnations and Picotees, finish potting without fail; plant out seedlings to bloom; sow seed. Cinerarias, shade; pot off seedlings as they grow; it is not too late to sow seed yet. Dahlias, harden off, and plant out towards the end of the month; cuttings of rare kinds may yet be put in. Hollyhocks, stake, and water with liquid manure. Pansies, in bloom, shade from sun; water and stir the soil about them; keep them clear of weeds. Pinks, stir the soil between the rows, and apply a mulching of short dung. Ranunculuses, water freely in dry weather. Tulips, protect from frosty nights and heavy rains; retard the bloom, if too early, by shading during hot sun. Verbenas, plant out, b.; in pots, water freely, and shade. Look out for weeds, slugs, and various insects, and destroy them constantly and diligently.

T. Appleby.

FLOWER GARDEN.

Anemones, water well between the rows. Annuals (Tender), remove into another hotbed; pot, if not done in April; water gently, and give air as much as possible; prick out April-sown. Antirrhinums, plant and sow for late autumn bloom. Auriculas done blooming, remove to N.E. aspect, where they will not have the sunshine after nine; offsets with roots detach, and plant three in a pot; seedlings keep in the shade; water moderately in dry weather; auriculas to seed should be kept from wet. Awnings, or other shelter, continue over beds of tulips, e., now in bloom. Bedding-plants, be not in too great hurry to plant out; the middle of the month is time to begin any of the half-hardy plants. Biennials, sow, b., in rows, thinly. Bulbous Roots, generally, directly leaves decay, take up and store; seedlings shade through midday; plant again after separating offsets, or else store until the end of July. Carnations; remove side-buds from flower-stems; shade from meridian sun; water in dry weather; put sticks to, and tie stalks; sow. Dahlias, old, part and plant, b.; young, plant out, e. Dress the borders, &c., frequently. Flowering Plants require staking, &c. Fuchsias may be planted. Grass, mow and roll weekly. Gravel, roll weekly. Hyacinths, take up and store as leaves decay. Mignonette, sow for succession, b. Mixed Borders, go over twice this month, and mark such plants as seem out of place. Œnothera macrocarpa, make cuttings of when the young shoots are three inches long. Prune and transplant Laurestinus when done flowering; also prune Berberis aquifolia. Perennials, sow, b.; propagate by slips and cuttings. Polyanthuses, part, and shade throughout the

summer; sunshine destroys them; sow seed of. Roses, watch for insects on, and destroy them; roses in groups, keep them low; roses in pots may be planted out. Rose-stocks for budding, do not rub off shoot; but stop those not wanted at the second or third joint. Stake and tie up plants; seedlings, thin. Surface-stirring cannot be too frequently performed. Tulips, remove seed-pods; take up and store as leaves decay; water frequently in dry weather. Wall-flowers, sow first crop, to bloom next year. Water-glass bulbs, plant in borders as flowers decay. Watering, attend to in dry weather, especially to plants newly removed. At the commencement of this month, during showery weather, plant cuttings of *Double Wall-flowers* and *Pansies*, and divide the roots of *Neapolitan* and *Russian Violets*, transplanting in preparation for potting to flower in winter. *Half-hardy plants* may now be brought from the greenhouse, and their other winter shelters, and distributed in the borders. Mild moist weather is most suitable for this work. The more tender *climbing annuals*, such as *Tropœolum aduncum* and *Convolvulus major*, should not be planted out until the end of the month. Put in Slips of double White and Purple Rocket, under hand-glasses, or near a wall on the north side. Cuttings of China Roses plant in a shady place. D. Beaton.

FRUIT FORCING.

Aphides, keep down by fumigation or the liquid. Bottom-heat, beware extremes, watch frequently, do not exceed 85°. Capsicums, pot off, and get forward, b. Cucumbers, increase atmospheric moisture to, in house; renew linings in frames; fumigate if the fly appears, and stop and set frequently. Figs, water freely; stop a few eyes beyond the fruit. Fires, moderate. Floors, water thrice a day. Insects in general, look for constantly; fumigate in time. Kidney Beans, water freely with liquid manure, and stop; pot off a succession, b. Liquid manure use clear and weak, frequently. Mushroom-house, keep a very moist air to; make a late spring bed, mixing loam with the dung, b. Melons, train, stop, thin out, set, &c., almost daily; water very freely as soon as the fruit are as large as eggs, using liquid manure; continue to plant successions, and sow the latest lot, b. Nectarines, give peach treatment. Peaches, stop, disbud, train, thin their fruit, &c., and syringe freely twice a day. Pines, watch bottom-heat, water more liberally, and keep moist air to. Shading, practice if vegetation is oppressed. Red Spider: sulphur pipes, flues, &c., once a month. Tomatoes, harden off, b. Ventilate freely on all proper occasions. Watering, increase with the season. R. Errington.

ORCHARDING.

Apricots, hand-pick, b.; thin fruit, m. Aphides, destroy. American Blight, watch for. Apples, hand-pick. Borders, clean and dress. Budded Trees (last year), remove wild shoots from, and secure the growing bud. Cherries, train and clear from Aphides. Currants (Red and white), stop watery breast-shoots, e. Currants (Black), keep down fly, b.; water when dry. Disbudding, perform frequently. Figs, prune, train, and disbud; commence stopping, e. Grafts, keep down wild shoots of last year's, and secure the graft from wind. Liquid Manure apply to hard-bearing trees. Mulching, attend well to, e. Nectarines, as peaches. Nuts, destroy suckers, e. Plums, clear from fly, and train, b. Peaches, disbud, and cleanse from Aphides, b.; stop gross shoots, and thin fruit, e. Pears, train, and thin fruit, e. Protection, remove from blossoms, m. Red Spider, extirpate; depend on sulphur and the syringe. Raspberries, thin out shoots where very thick, and remove unnecessary suckers, m. Stopping, keep an eye to. Staking, look to in orchard, b. Scale on bark, extirpate, b. Strawberries, mulch and water freely in blossom. Alpines may still be planted, b. Training, attend to assiduously, especially with young trees. Water, apply in drought to new planting. Walks, clean or turn. R. Errington.

GREENHOUSE.

Air admit freely in good weather. If the house should be shut up in cold nights, give air the first thing in the morning; toward the end of the month leave a little air all night, increasing the quantity by degrees. Annuals, &c., bring in from pits and frames, when approaching the blooming state. Sow quick-growing ones, as Balsams; and hardy ones, as Collinsias and Nemophilas, for succession. Mignonette, sow in pots, or in turf under protection, for succession. Achimenes, bring first or second lot from their winter quarters, and place them in pans in the front of a cucumber-pit, or under a handlight in the greenhouse. Balsams and Cockscombs must now be sown or potted; the Balsams requiring less heat and more air than the Cockscombs. Cuttings, consisting of nice stubby side shoots of young growth will now root readily in a mild bottom-heat. All bedding-out plants intended for the balcony or a small flower-garden may now be propagated very easily, if inserted in a bed of light soil over a little sweet dung, and a frame placed over them. All quick-growing things, such as *Verbenas, Ageratums*, and *Calceolarias* may thus be rooted with little trouble, and be fit for planting or potting in two or three weeks. Young shoots of *Heaths, Epacrises, Azaleas*, &c., may now be struck, inserting them in silver-sand, in pots well drained, and putting a bell-glass over them; keeping them rather cool for a few weeks, and then giving them a little mild bottom-heat. The whole of this section must be treated as previously recommended, according as they are in bloom, have finished blooming, or have been cut down by pruning. Earth: stir the surface on pots and borders, and fresh dress where repotting or renewing the earth is not advisable. Sow seeds of the Orange or Lemon, and when of a suitable size let them be grafted or inarched—preferring the former—and placing the plants in a moist hot-bed; any stocks raised late last season may be so used. For flowering in a dwarf state, and almost continuously, the Otaheite orange is valuable. Shifting into larger pots must be carefully proceeded with. In the case of *Fuchsias, Geraniums, Cinerarias*, &c., intended as successive crops, those advancing should be carefully trained, according to the principles recently adverted to. Succession crops of *Achimenes, Gloxinias, Gesneras*, &c., must now be seen after. Salvias must be propagated for autumn and winter blooming. Seeds of *Salvia patens* produce strong nice flowering plants. Their doing well for the season will depend on the treatment they receive *now*. In consulting present convenience, we must not forget the future. Stocks, and all half-hardy plants may now be sown under handlights, or a covering of some sort on a border, and will take the place, in succession, of those that received some artificial heat. Hardy Plants should now be set in a sheltered corner, to make way for the importations from the pits and frames. The first to be removed may consist of *Coronillas, Cytisus, Acacia, Pittosporum*, &c. Seedlings and Cuttings must be pricked off in time, or they will destroy each other. Water will be required oftener as the sun gains strength. Plants with large leaves generally require the greatest supply. Plants in Windows will now require extra attention. The increase of mild temperature will bring an increase of dust and insects. Vases and Baskets for balconies and small gardens, must now be got ready, but do not be too venturesome in planting them for a fortnight to come, unless you can cover at night. R. Fish.

KITCHEN-GARDEN.

Angelica, plant, or thin out, as the case may require. Artichokes, dress off, if not done, and plant a few suckers for succession. Alexanders, attend to thinning, &c. Asparagus, sprinkle with salt once a week during the cutting season. If this be attended to there will be no fear of weeds or slugs; but the surface of the beds should be opened once a week with some little pointed implement. Balm, earthstir among. Beets (Red), thin out, &c. Basil should be exposed to the open air all fine weather, so as to have good stocky plants to plant out toward the end of the month in warm borders. Beans, sow in succession in cool situations; attend to topping and earth-stirring advancing crops. Borage, sow, and save seed from such as have stood the winter. Borecole, sow, b.; prick out, and save for seed. Brocolis of any kind may be sown at the beginning, for *Cape Brocoli* in particular this is just the season, when sown sooner they are so apt to run or button; attend to pricking and planting out any early-sown kinds, and to look to favourite kinds for seed. Burnet, attend to. Cabbages, sow or plant; earthing attend to. Capsicum raised in hotbeds, should be well inured to the open air, for planting out in the open warm border, at the end of the month. Carrots, sow; attend to thinning-out advancing crops, also attend to watering the early crops in frames or the like. Cardoons, thin out or sow b. Cauliflowers, the early hand-glass crops should be well basened up, supplied with water, and *liquid manure* water, once a week; attend to pricking or planting out in succession. Celery, may sow; attend to pricking and planting out the earlier sown. Chamomile, earth-stir among. Chervil, sow, and leave for seed. Cress (American), sow; save for seed. Chives, keep clear from weeds. Coriander, sow, and leave for seed. Crops failed, lose no time to replace. Cucumbers, plant out under hand-glasses upon a little bottom-heat; attend to thinning, topping, and removing any decayed leaves daily; those in bearing assist with a little top-dressing often. Dill, attend to. Earth-stirring, in all cases attend to in dry weather. Endive, sow a little towards the end of the month for early use. Fennel, attend to planting out seedlings. Hotbeds, attend to. Hyssop, attend to. Kale (Sea), earth-stir, or carefully fork up among the old crowns, if not done before; look over seedlings, and where sown in patches to remain, thin out and attend to. Kidney-beans (Dwarfs) and Runners, sow main crops at the b., or transplant from hot-beds; make another sowing e. of the month for succession; attend to protection in case of frosty nights. Leeks, thin out early, or transplant; leave for seed. Lettuces, sow every fortnight; plant out and tie a few every week, and mark some of the best, or any favourite kinds that have stood the winter, for seed. Marigolds, sow. Marjoram (Sweet), see *Basil* (common garden), may plant and keep clear from weeds. Melons, sow b.; pot off and ridge out in succession; attend to setting fruit, thinning, topping, earthing-up, and watering the advancing crops. Mint, plant out new beds where required; if short of rooted plants, cuttings will root readily at this season, if planted and well watered. Mushroom-beds should be made in the coolest situations at this season; attend to those in bearing. Mustard and Cress, sow in succession where required. Nasturtiums, sow without delay, if not done before. Onions, weed; keep the surface earth loosened; a small fine-toothed iron rake will be found an excellent tool for this and similar purposes; (Welsh) leave for seed. Parsley, sow; thin out *Hamburgh*, and leave for seed. Parsnips, thin, and earth loosen. Peas, sow in succession; draw up earth along each side of the rows before sticking, in case soakings of water should be required; sticking attend to in time. Pennyroyal may be planted in a cool situation. Pompions, sow, or plant out under hand-glass, upon a little bottom-heat. Potatoes, hoe amongst, with care not to injure the young fibre. Purslane, sow; leave for seed. Radishes, sow in cold situations; and leave for seed. Rape, sow for salading; (edible-rooted) sow, e. Rosemary and Rue, may plant. Sage, may plant; cuttings root readily at this season if planted in a shady border and well watered. Salsafy and Scorzonera, sow main crop b. Summer savory, sow or plant out. Savoys, prick out, &c. Spinach, sow and leave for seed, and thin out young crops. Tansy and Taragon, may plant. Tomatoes, attend to for planting out e. of the month. Turnips, sow, thin out, and leave for seed. Turnip Cabbage, sow. Vegetable Marrow, sow or ridge out under hand-glasses upon a little bottom-heat. Many *frosty nights* may be expected during May, therefore, previously to planting out tender plants, remember how it is to be protected should cold cold or unkind weather set in. T. Weaver.

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DAHLIAS FOR 1852.—A DESCRIPTIVE CATALOGUE OF DAHLIAS, ETC., GROWN FOR SALE BY

CLARKE AND COMPANY,

SEEDSMEN AND FLORISTS, 86, HIGH STREET, OPPOSITE THE TOWN HALL, BOROUGH, LONDON.

CLARKE & CO., encouraged by an increasing trade in Dahlias, beg respectfully to submit the following list for 1852, they consider that they have enumerated all varieties worthy the attention of the admirers of that popular flower. The selection has been made from many hundreds of varieties, and all such as were second-rate have been discarded.

In the first class of Dahlias, as below, will be found many scarce kinds, such as most lists do not contain, and amongst the Fancy sorts are all the most novel and curious flowers, of Tipped, Laced, Spotted, and Striped varieties. The satisfaction afforded to our Dahlia customers last year is, we flatter ourselves, a sufficient guarantee of the genuineness of our stock, and we trust will induce our friends to favour us again with their kind orders.

Plants of the following New and First-rate varieties at 10s per Dozen.

ft. high

Antoinette, *Bushell*, blush 3
Admiral, *Bragg*, light lilac, large and extra fine 3
Alpha, *Parsons*, nankeen.. 3
Ambassador, *Green*, large dark maroon .. 2
Anticipation, pale lilac, good show flower .. 3
Blanchfleur, *Morley*, pure white, good .. 3
Berenger, *Fauvel*, purple.. 3
Baltic, *Bushell*, amber 2
Barmaid, *Holmes*, white, early in the season beautifully tipped with lavender, fine form.. 3
Beauty of Kent, *Trenfield*, white, deeply edged with carmine, very attractive 5
Carmina, *Bragg*, carmine red, large useful show flower 3
Elizabeth, *Whale*, white, tipped with lavender 3
Goliath, *Turner*, buff, a new shade of colour, double, full and fine in form. Early blooms, rather uncertain, but are very true and constant during the latter part of the season, scarce 4
General Faucher, *Rose*, rosy carmine, very symmetrical, large, constant, and extra fine .. 4
Gem of the Grove, *Soden*, maroon shaded, good show flower 4
Gracilis, *Salter*, orange fawn, tinted rose .. 3
George Glenny, *Barnes*, yellow, an immense flower, good 3
Hon. Mrs. Ashley, *Bragg*, white, tipped with rose 3
Hon. Mr. Herbert, *Dodd*, buff, mottled and tipped with pink, full and deep, fine flower.. 3
Julien, *Hale*, rose, compact, good 3
Kant, *Salter*, white, fine form 3
King, *Morgan*, rich crimson, good form .. 3
Leda, *Fellows*, buff 3
Lady E. Cathcart, *Turner*, white, tipped with purple 3
Model, *Fellows*, brown 4
Madame Kuhlmann, *Bauduin*, white, mottled with rose pink, very showy 3
Mr. Palmer, *Turner*, salmon, large 4
Miss Herbert, *Keynes*, white, tipped with purple 3
Miss Spears, *Lamont*, VERY SCARCE; the Florist for Jan. says of Miss Spears, crimson, richly shaded with maroon, first blooms small, but with good growth, they ultimately come large enough for any stand, fine compact form, very constant 4
Model, *Barnes*, dark 3
Nepaulese Prince, *Stein*, dark crimson .. 4
Napoleon, *Parker*, vermilion 4
Nil Desperandum, *Stein*, red, large and deep 4
North Western, *Kimberly*, purple, large .. 3
Nepaulese Chief, *Keynes*, striped like a Zebra 3
Pauline, *Kimberly*, purple 3
Pirolle, *Salter*, crimson purple 4
Queen of Beauties, *Mitchell*, waxy white, tipped with crimson, a splendid flower 3
Queen of Dahlias, *Kelsall*, white, deeply edged with lilac 3
Queen of the West, *Sealey*, blush white .. 4
Quirenus, *Salter*, dark red 3
Roundhead, *Holmes*, salmon buff, fine form .. 4
Regina, *Hale*, dark rosy purple.. 3
Sir C. Napier, *Hale*, rich deep scarlet, constant and extra fine 3
Sir R. Peel, *Drummond*, scarlet lake, very symmetrical, of exquisite form, very fine .. 5
Summit of Perfection, *Keynes*, purple, extra fine, but rather uncertain 3
Sylph, *Servey*, white, tipped with lavender, large 4
Uranus, *Salter*, orange, shaded with rose .. 3
Yellow Gem, *Gurney*, bright yellow 3

Plants of the following Choice varieties at 4s per dozen.

ft. high

Admiral Stopford, dark 4
Andromeda, primrose, tipped carmine 4
Antagonist, white 3
Beauty of Highbury, white, deeply laced with carmine .. 3
,, Supreme, salmon lake .. 3
,, of Sussex, white cherry tipped 3
Beeswing, bright crimson.. .. 3
Black Prince, maroon 4
Box, scarlet 4
Charles Turner, white, tipped with lavender 4
Captain Warner, puce 3
Cardinal Ferretti, dark red .. 4
Crocus, dark yellow 3
Duke of Cambridge, lilac.. .. 3
,, Newcastle, yellow .. 4
Duke of Wellington, orange, fine 3
Dane Croft Hero, bright puce .. 4
Delight, white, edged with carmine 3
Duchess, pure white 3
Earl of Clarendon, orange .. 4
El Dorado, pale canary yellow .. 4
Elizabeth, peach blossom.. .. 4
Essex Triumph, dark 4
Fame, rich burgundy 3
Fearless, lilac, extra 3
Frederic Jerome, bluish purple .. 3
Gaiety, mottled orange 3
Gem, white, edged with purple .. 3
General Negrier, bronze 4
Globe, crimson 3
Golden Fleece, orange buff .. 3
Imbricata, crimson purple .. 4
Inimitable, dark rosy purple .. 4
John Edwards, light scarlet .. 5
Lord Mayor, crimson 3
Lady of the Lake, white, tipped lilac.. 3
,, St. Maur, white, tipped violet 3
Magnificent, amethyst, fine .. 4
Mr. Seldon, beautiful rosy purple 3
Marchioness Cornwallis, blush white 3
Mrs. Seldon, beautiful yellow .. 5
,, Charles Bacon, white, tipped lavender, large 4
Mdlle. H. Gobert, beautiful rose.. 4
Miss Chaplin, blush laced carmine 3
,, Vyse, white, edged lilac .. 3
Negro, very dark 4
Nonpareil, ruby 4
Optimus, blush white 5
Princess Louisa, shaded salmon.. 4
,, Radzeville, white & purple 4
Privateer, yellow, laced red .. 4
Purple Standard, purple 3
Queen of Beauty, peach lilac .. 4
,, the Isles, white, tipped with crimson .. 3
,, Lilacs, lilac 3
,, Primroses, primrose .. 3
,, the East, blush white .. 3
,, England, white, tipped carmine 3
,, Yellows 3
Richard Cobden, plum, fine .. 4
Seraph, orange 3
Sir F. Bathurst, crimson, extra .. 3
Snowflake, white 3
Scarlet Gem, light scarlet.. .. 3
Shylock, bright scarlet 4
Standard of Perfection, crimson .. 3
Thames Bank Hero, crimson .. 4
Toisson d'Or, light orange .. 3
Utillis, puce.. 3
Yellow Standard, yellow 3

Select Fancy Varieties, containing the most Novel Kinds ever introduced, in all descriptions of Shade and Colour, and are not to be surpassed. Those marked thus (*) are 10s per doz., and the others 4s per doz.

ft. high

*Admiration, *Widnal and Davis*, bright purple and white.. 3
Adolph Dubras, nankeen, laced with white .. 3
Belle de Nogent, scarlet, tipped with white .. 3
* ,, de Pecq, *Miquet*, creamy yellow, tipped with white, spotted and striped with red, very curious 3
Charles Perry, dark puce, tipped with white .. 3
Comus, carmine, tipped with white 3
*Deutsche de Ordenstern, *Salter*, brown, tipped with white 3
Discount, dark maroon, tipped with white .. 3
*Elegantissima, *Mitchell*, rosy purple, tipped and edged with white 4
Empereur de Maroc, black, tipped with white, extra fine 3
Elizabeth, amethyst and white, extra fine .. 3
Flying Dutchman, red and white, large .. 3
Floral Beauty, crimson, tipped with white, fine 3
Forget me Not, crimson, edged with white, good 4
Gasparine, dark cherry brown, tipped with white, extra 4
General Cavaignac, purple, tipped with white 4
Highland Chief, salmon, tipped with white .. 4
Jeannette, chesnut brown, tipped with white 3
Jenny Lind, crimson, tipped with white .. 3
*Kingfisher, *Turner*, red, tipped with white, large 3
Keepsake, blood red, tipped with white .. 3
La Rosiere, rose, striped with crimson .. 3
Lady Cullum, yellow, tipped with white .. 3
,, Grenville, red, tipped with white .. 3
Madame Basseville, light yellow, striped and spotted with crimson 3
,, Bresson, nankeen, tipped with white 3
,, Eberth, violet, tipped with white .. 3
,, Wachy, crimson, tipped with white 3
* ,, Rose, *Miellez*, bright rose, tipped with white, very pretty 2
*Mrs. Hansard, *Edwards*, yellow, tipped with white, large and extra fine 3
* ,, Willis, *Liddiard*, maroon, tipped with white, extra fine form 3
,, Labouchere, scarlet, tipped with white 3
,, Shaw Lefevere, red, tipped with white .. 4
*Miss Weyland, *Union*, amber, edged with red, tipped with white 2
* ,, Pope, *Pope*, light yellow, tipped with white 3
,, Blackmore, purple, tipped with white, good 3
,, Compton, salmon scarlet, tipped with white 4
,, Stevens, pinky salmon, tipped and shaded with white 3
*Maid of Lodi, *Lewis*, scarlet, edged with white, colour very constant, good form 3
*Mr. Chouvereau, *Robert*, violet, tipped with white, very constant and showy 3
Master George Clayton, purple, edged with white 3
*Novelty, crimson, edged with lilac, sometimes tipped with white, very curious 4
*Nigger, nearly black, tipped with white .. 3
*One in the Ring, *Dodd*, crimson, tipped with white 3
Œillet Parfait, yellow, striped with carmine .. 3
*Proserpine, *Salter*, brown, tipped with white 3
*Phaeton, *Miquet*, rosy crimson, tipped with white, extra fine 3
*Princess Charlotte, *Miquet*, violet, tipped with white 3
* ,, Leopoldine, *Van Geert*, crimson, tipped with white 4
*Pretty Polly, *Turner*, light red, tipped with white 4
Picotee, sulphur, striped with crimson .. 3
Picturata, cream, edged with scarlet 3
Postsecretaire Haine, dark purple, tipped with white 3
*Queen of Fairies, *Domeyer*, rosy crimson, tipped with white 4
*Rachael, *Gaines*, white with purple edges; the Florist for March calls this the best purple and white dahlia out 3
*Reine Pomare, vivid orange scarlet, tipped with white, showy and constant in colour 3
Rainbow, red, tipped with white 3
*Symmetry, *Barnes*, maroon, tipped with white 4
Striata Perfecta, lavender, striped with carmine 3
Theresa Richter, white, spotted with carmine 4
Triumph de Madgeburg, scarlet, tipped with white 4
*Vulcain, *Tassart*, red, tipped with white, good 3

Verbenas in great variety 4s per doz.
Fuchsias do. do.
Geraniums do. do.

Senecios in variety 4s per doz.
Mimulus do. do.
Calceolarias do. do.

Cupheas in variety 4s per doz.
Heliotropes do. do.
Salvias do. do.

Penstemons in great variety 4s per doz.
Ageratums, Petunias, Antirrhinums, Phloxes, Lobelias, and all other kinds of bedding-out Plants.

Baskets to Pack One Dozen Plants in, 4d each. Baskets to Pack Two Dozen Plants in, 6d each.

A Remittance or Reference required from unknown Correspondents.

WEEKLY CALENDAR.

M D	W D	MAY 6—12, 1852.	Weather near London in 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
6	Th	Pheasant lays.	29.846—29.775	52—36	N.W.	01	24 a. 4	29 a. 7	10 59	17	3 35	127
7	F	Swallow builds.	29.868—29.830	58—38	W.	—	22	30	morn.	18	3 40	128
8	S	Easter Term ends.	29.770—29.674	61—38	S.	—	21	32	0 2	19	3 44	129
9	Sun	4 Sunday after Easter.	29.676—29.639	59—43	S.	—	19	34	0 53	20	3 47	130
10	M	Long-horned Bee seen.	29.613—29.598	70—37	S.	03	17	35	1 31	☾	3 50	131
11	Tu	Aspen leaves.	29.775—29.715	66—47	N.	—	16	37	2 1	22	3 52	132
12	W	Wall Butterfly seen.	30.070—29.875	63—43	N.	29	14	38	2 25	23	3 53	133

Meteorology of the Week.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 62.6° and 41.1° respectively. The greatest heat, 81°, occurred on the 6th in 1830; and the lowest cold, 28° on the 6th in 1845. During the period 111 days were fine, and on 64 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

(*Continued from page 57.*)

ADONIS. PHEASANT'S EYE.

Generic Character.—*Calyx* below fruit, of five, converging, blunt, concave, somewhat coloured, deciduous leaves. *Petals* five to fifteen, oblong, blunt, shining, with simple claws, without nectaries. *Stamens* numerous, with awl-shaped, very short filaments. *Anthers* terminal, bent in, of two round lobes. *Germens* very numerous, in a round head. *Pistils* styleless, with *Stigmas* acute, spreading. *Seeds* numerous, swollen, angular, acute, without any appendage. *Receptacle* cylindrical.

Adonis autumnalis: Adonis flower; Autumnal or Corn Pheasant's-Eye; Red Maithes; Bird Flower; Red Morocco.

Description.—It is an annual. *Root* tapering. *Stem* erect, branched, often bushy, hollow, round, channeled, leafy, purplish, rarely a little downy; six to twelve inches high. *Leaves* dark green, alternate, stalkless, triply-wing-cleft with narrow, acute, smooth segments. *Flowers* of a deep shining crimson, with a black spot near the claw of each *petal*, and dark-violet *anthers*. *Seeds* covered with a thick permanent coat, composing an oblong, egg-shaped head, not an inch long. The *petals* vary in number from six to ten, but are inversely heart-shaped, notched, scarcely longer than the *calyx*, which is usually smooth, purplish, unequal, egg-shaped, toothed at the tip.

A. æstivalis of Linnæus has never been found in England; for specimens noticed in the third edition of Withering were a starved and paler *A. autumnalis*.

Places where found.—In corn-fields, but not common.

Time of flowering.—May to September.

History.—It is very common in the South of Europe, and has been thought by some to have been thence introduced into our gardens, and from these escaped into our fields. At all events, it is unmentioned by some of our earliest herbalists, and even Ray, writing in 1686, observes:—"they say that it occurs spontaneously in England, although rarely, but certainly as yet it has not fallen in my way." Gerarde, however, as long before as 1596, observed that—"The red flower of Adonis groweth wild in the west parts of England among their corn, even as May-weed doth in other parts. From thence I brought the seed, and have sown it in my garden for the beauty of the flower's sake. The country people call it *Red Chamomile*, and the London women do call it *Rosea-ruby*." Parkinson, in the index of his Herbal, published in 1629, says—"Maiths, or May-weed. Red Maithes is Flos Adonis, or Rosa-rubie."

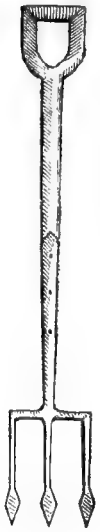
It is said to be the flower which sprang from the blood of Adonis, the favourite of Venus, when slain by the wild boar, from the chase of which she vainly endeavoured to dissuade him. The French name of this flower, *Goute de sang* (The drop of blood), alludes to this fable, as well as to the colour of the flower. Matthiolus gives a good drawing of the plant, and says that some consider it belongs to the Chamomile family, but he thought that this cannot be, because, whereas the Chamomile is mild, and smells gratefully, this plant is of an ill-savour, acrid, and ulcerates the skin upon which it is bound. Sir John Hill says that it has not been used in medicine, though some recommend an infusion of the flowers in wine as a remedy for colick, but that it wants the authority of more experience. (*Smith. Withering. Martyn. Ray. Matthiolus. Hill.*)

We have heard it objected that digging *heavy* soil by means of a three-pronged fork is a practice to be commended, and readily adoptable, because the soil clings together, but that in light lands it is far otherwise, and if at all dry, it is next to impossible to raise a forkful of them, for the soil crumbles through the prongs. There is some truth in this, but the soil must be most excessively dry before such an inconvenience arises, and even when in the driest state the slightest support to the soil prevents its falling through, under any circumstances. Such a support is afforded by increasing the breadth of the points of the prongs, as described in the following letter, and a fork so constructed is effective, under any circumstances, in digging all soils, except such as are not merely the driest sand.

The letter is from a clergyman (the Rev. R. E. M.), and is in these words:—

"I send you a sketch of what I call a 'Trident prong,' believing it to be a stranger in the southern counties; at least, I have never met with it in any south of Lincolnshire. I find it of immense service in the garden, and far surpasses the spade in what an operator would call its *working* qualities. It penetrates the ground much easier,

is not so liable to *clog* in damp soil, breaks the clods when turned up more effectually, and for potato-digging, or working amongst other roots, it stands alone and unrivalled. It will take up as much soil as a spade, unless the earth be very loose and friable; and even this may in a degree be obviated, by having the *arrow-heads* (which should be *steeled*) made a little larger, so that their inner angles may be closer together. Of course this tool may be made as heavy or as light as may be required, according to circumstances. All I know is, that my father's workmen in Berkshire will never touch a spade for hardly any purpose, if they can get one of these forks. I need not give any dimensions, as of course they would be the same with any three-grained fork. If you should not have happened to have met with Neptune's insignia in this guise before, I am sure upon trial that you will be pleased with it, and I shall feel happy in having been the means of bringing it under your notice."



FORSYTH MSS.

Abundant proofs are in the letters before us of Mr. Anderson's indefatigable industry and sound judgment, yet misrepresentations were sent home, and he had thus to defend himself in a letter dated June 6th, 1786, and we insert the extract the more readily because it contains needful and sound advice to those about to migrate to a tropical climate.

MR. A. ANDERSON TO MR. FORSYTH.

I had letters from Sir George Yonge, Sir Joseph Banks, and Mr. Adair. They seem to think I pay too much attention to the useless and neglect the useful plants, but that is far from being the case, for the introduction and cultivation of plants useful in medicine or commerce are objects I always keep in view, and flatter myself I have not been negligent that way, for all my disquisitions tend to the interest of the department. I assure you, the introducing those that appear useless has been no additional expense to the department, or occasioned any inattention to the necessary duties thereof.

The idea of those plants whose properties are not yet ascertained being cumbersome to the garden, and taking place of more useful, is wrong, for it is absolutely necessary to get the ground as thick covered with plants as possible before the more useful will thrive, for there is no cultivating plants with success in this country without screening them from the direct rays of the sun, and retaining the natural moisture of the earth by shade; for which end I have been obliged to fill every part of the garden that was open and exposed with fast-growing plants, which prosper in all soils and situations, and which are useless and ugly, such as *Æschynomene grandiflora*, *Ricinus*, &c., before I could get any others to grow. Shelter from the sun is as necessary here as from cold with you, and this holds good in the spontaneous productions of the country, and you may depend upon it there is little less trouble in cultivating plants with success here than with you. The most proper plan, and is the one I should have adopted had I got possession of the botanic ground in a state of nature, to have let it remain nearly so for some years, at least all the trees and taller plants should have remained, and only clearing the underwood and vines, and so sown my seeds, and reared my plants with little trouble. Nor is there anything more ridiculous than a spot of land intended for a garden in this country to be cleared as in Europe, and I have often viewed the negro gardens with surprise, being filled with all kinds of vegetables in the greatest perfection, while their master's garden was a bed of dry earth. This I readily found to be from the negroes tracing the footsteps of nature, by leaving every tree that would shelter the labours of his hand, while his master acted the contrary. Whoever has seen a tropical country in a state of nature, views with admiration the wise precautions nature has taken to guard her vegetable offspring; and when the luxuriancy of it far surpasses anything of the kind in any other climate in the world, from the tallest tree to the most grovelling vine, every individual mutually aids and supports one another. The spreading branch and thick foliage of the lofty tree protects the humbler plants from the scorching rays of the sun, they, in return, cover the surface of the earth, and retain a perpetual moisture to nourish the roots of their protectors, so that in the woods of tropical climates there is a perpetual shade and moisture, and so thick that most parts are hardly pervious to the smallest quadruped.

Industry and integrity triumphed over all difficulties, and having obtained an intelligent sergeant of Artillery as his deputy overseer of the garden, Mr. Anderson readily availed himself of a long-desired opportunity of visiting the South American continent. The result is told in the following letter, dated from St. Vincent's, July 16th, 1788.

MR. A. ANDERSON TO MR. FORSYTH.

I am sorry to inform you my expedition to the main proved fruitless, through the ignorance of a rascally mulatto pilot, who, in carrying us into Cumana, run the frigate, among rocks and shoals, that it was with great difficulty she was saved, and that was solely owing to the sagacity and address of Captain Bickerton. After extricating the frigate, the captain, as well as every one on board, deemed it too serious a matter to risk her further on such a dangerous and unknown coast, where no more confidence could be placed in our pilot. With great reluctance we were obliged to return. You may readily judge of my disappointment; after running along a country for some hundred leagues, where every moment new objects excited new desires to get on shore, and when I thought the moment was almost arrived when I conceived my desires were to be gratified, to find them frustrated. But I never can enough manifest my gratitude to Captain Bickerton for his attentions to me during my stay on board the frigate, which was three weeks, indeed, the whole of his conduct was that of a brother, and he was far more concerned at my disappointment than any other thing that happened. He is a young man of education, and has a natural turn for knowledge of all kinds. He much wishes to have it in his power, after the hurricane season is over, to carry me to some part. Could not a pass be procured for me from the court of Spain, in case I should make future attempts to the Spanish Colonies? The Emperor of Germany has at present two naturalists travelling over the continent.

GOSSIP.

Such a long-continued series of dry spring weather as has occurred this year is not within our recollection. At Manchester, one of the wettest districts of England, not three-tenths of an inch of rain fell in the course of eighty days, though those days included part of "February fill-dyke," and the whole of "showery April." To this most unusual season of dryness must be attributed the comparative exemption from any injury that has befallen the early blossoms of our fruits. *Wall-fruit* has usually set well; *Gooseberries* are most abundant; and we hope the same report applies to *Pears;* and all this despite the continued easterly winds and frosty nights. Mr. Errington, writing to us on the 25th, says:—"Winds East! East!! Frosts nightly! sometimes half-a-dozen degrees of it! What say the no-protection men and *spring planters* now?" We should like to hear from various quarters of the British Isles what have been the effects of such a season on our various garden crops. Such weather, and the unusual coldness

of the earth at some inches below the surface, which is another characteristic of the season, have caused many plants to be unusually backward. We are writing this at Winchester, on the 28th of April, and we have scarcely a *Currant-tree* in blossom; and the first flowers of the *British Queen Strawberry* are this day expanded. On the other hand, the continued drought has forced many of our kitchen-garden crops prematurely into flowering; and foremost among these are our spring *Cabbages*, among which we never before saw so many "runaways"; nor did our *Rhubarb* ever before throw up its flower-stems so early. The rain has commenced this day.

Decandolle's theory that the yellow, or Xanthic world of flowers, never admit a blue among their tribes, and that the blue, or Cyanic world of the same petaled creatures are as inexorable in not permitting a yellow associate, we have long considered more fanciful than probable. We remember being told by Mr. Justice Kekwich, at the Cape of Good Hope, that he had there seen a *yellow Geranium;* and now Mr. Fortune announces that he has a *yellow Camellia*. It is probable, therefore, that a yellow Dahlia will *not* remain "a horrid monster which the world ne'er saw."

At a meeting of the Horticultural Society in Regent-street, in the third week of April, a reward was given to Mr. Solomon, of Covent-Garden, "for fine examples of Paris Cos and Grand Armirable *Lettuces imported from France.*" We mention this fact to direct the attention of our readers to the subject, and to request that every cottage gardener will try some experiments to remove this disgrace from our practice of the art. Import lettuces from France! There is no more reason for our doing this, than there is for our importing its President and its grenadiers; for very superior lettuces grown in England can be produced on table in April. They *have* been so grown by Mr. Labouchere and others; but then we are told that the cultivators were *Dutch* gardeners! Now what a Dutch gardener can do on English soil an English gardener can effect there; and for a few hints on the subject, we direct attention to Mr. Lockhart's communication at p. 136 of our last volume. Mr. Lockhart was for several years in Holland.

The following is extracted from a letter from Mr. M. Mayes, of Durdham Down Nursery, Bristol:—

"The Amaryllis which has grown against the wall of our pine-house, is *Amaryllis aulica*, var., *platypetala*. There is a figure given of this plant in the Botanical Register, but I do not remember in which volume. It has flowered regularly with us in the month of October. Its roots adhere as firmly to the wall as those of an orchid to a stick. I have found it does not succeed well in the soil I use for other kinds of Amaryllis, but find it will do well in the composition generally used for growing orchids in pots. We grow our *Achimenes* in an equal mixture of half-decayed leaves, chopped moss, peat, and sand. The pots are well drained, and then half filled with the compost. The roots are then planted, and as they advance in growth the pots are filled with the soil before mentioned, an occasional watering is given with liquid-manure once or twice a week. We keep them in a humid atmosphere, varying from 60° to 70°, and shade them from the midday sun. We have a plant of *Epidendrum bicornutum*, showing six spikes of flowers; we also have *Renanthera coccinea*, showing flowers."

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Botanic, Royal, May 19, June 9, 30.
Caledonian (Inverleith Row), Edinburgh, May 8, June 3, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, May 13, June 15, Aug. 26.
Clapham, July 8, Sept. 11.
Chiswick, May 8, June 12, July 10.
Colchester and East Essex, May 26, at Mr. B. R. Cant's Nursery; June 23, at Mr. J. Taylor's, West Lodge, Lexdon Road; Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Derby, May 26, Aug. 4.
Durham, June 16, Sept. 8.
Guildford, June 16 (Millmead House).
Hampshire, May 18 (Southampton), July 1 (Winchester), Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hexham, Sept. 15, 16.
Hull, May 27, June 24, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), June 24, Sept. 9.
Lincoln, May 25, July 27, Sept. 14.
Liverpool, May 20, June 24, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), May 11+, 25, June 8+, 22, July 13+, 27, Aug. 10+, 24, Sept. 14+, 28, Oct. 12+, Nov. 9+, 23, Dec. 14+.
Mid Calder (Parish school-room), July 9, Sept. 10.
National Tulip Society, May 27 (Birmingham).
North London, Sept. 14; Nov. 23, Chrysanthemum.
Northampton, May 25, Tulip; June 29, Rose and Pink; July 27, Carnation; Sept. 27, Dahlia.
South London, Royal, May 13+, 20, June 17+, 23, July 15+, 21, Aug. 19+, Sept. 2+, 8, Oct. 14+, Nov. 11+, Dec. 9+, 16.
Shacklewell, Sept. 1.
South Devon, May 18, July 13, Sept. 6.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Turriff, June 11, Aug. 6, Sept. 17.
Whitehaven, July 9, Pinks; Sept. 17, Dahlias.

POULTRY SHOWS.

Agricultural Society (Royal), Lewes, July 12.
Cheltenham Monster Show, June 3. (*Secretaries*, Messrs. Jessop, Cheltenham.)

ORCHARD HOUSES.

Such a growing desire seems to exist for the orchard-house, or some modification of it, that we need not apologise for returning to the subject. In order to ground our future remarks on a tolerably sound foundation, let us at once examine the position of the question, and endeavour to ascertain what may, and what may not, be expected from its adoption.

In thus discussing it, we will assume that a demand exists for some more certain provision to obtain our superior fruits in all parts of England north of Birmingham. The assumption of this town is, of course, arbitrary on our part; but we take it for a double reason,—as being nearly the centre of England, and as indicating, perhaps, as nearly as any other town, the point where our more tender fruits, which do so well around the southern counties as ordinary standards, cease to prove satisfactory. To convey an idea of this, who can guarantee vines succeeding out-of-doors so as to be profitable, anywhere north of this parallel? Or who can fruit such pears as the Beurré d'Arenberg, or the Winter Neilis, with high flavour, melting flesh, and keeping properties, on the ordinary standard, in any county north of Warwickshire? Such, we are told, can be done in the neighbourhood of the Metropolis, and we dare say through Gloucester, Oxford, Bedford, &c.;

but we fear we must not go nearer the German Ocean for success.

Now that glass is rendered so cheap and so durable; now that the great principles of horticulture are rendered so simple and so certain, that men of eminence in the profession can calculate on any desired result, with a well-grounded confidence amounting almost to a certainty, humanly speaking; is it likely that the age can long rest on mere out-door productions? The fact is, the use of glass for such purposes carries with it such an aristocratic sound, that the majority of those in the middle class of society have scarcely yet fairly grappled with the consideration of how far they can or ought to advance in this way, in order to sustain their position in society. That the position of such persons is one of advance it requires no pains on our part to prove; a past and prospective view of commercial matters, on the whole, will tend to show that; or, indeed, a peep last year into the Crystal Palace was enough to drive away all stationary ideas, and to make the most stolid and apathetic mend his pace. Such, then, to all appearance, being the state of affairs in their relation to gardening, we will follow the subject out, and in doing so, must so far shake off unnecessary trammels as to leave ourselves free to discuss any doubtful point in Mr. Rivers's practice, and to offer suggestions,—a liberty we feel pretty well assured Mr. R., the ingenious originator, will readily pardon.

It is quite evident that any advance on the old wall-tree system must not be sought for in the character of the materials alone, as to their power of receiving or retaining the solar heat in their own substances. The heat once obtained, must be *enclosed*—at least, for a considerable time, daily; and this at once points to the necessity of a house, or some modification of one. Abundance of light is indispensable; and this points to a liberal use of glass, and that of good character. It may be asked, then, wherein consists the economy of such houses as Mr. Rivers has suggested? and, indeed, at first sight it appears somewhat difficult to make out a case. They may, however, be said to differ from the ordinary hothouse, in requiring no glass at the sides or ends (at least, not by any means of necessity), and in the total repudiation of any heating apparatus, as far as the wants of the object sought, *uncombined with any other*, are concerned. As for the economical way of going to work, in regard of the timber, &c., which Mr. R. has very properly adopted, that is alike applicable to other horticultural structures; nothing distinctive appears here. However, economy enough to make out a case is proved in regard of the sides, and the heating apparatus; and there is yet another phase of the question. Mr. R. adopts so simple a mode of fitting-up the interior, that its expense can hardly be taken into the account; this is as it should be, and not only subserves economy, but is better adapted for the fruit-trees.

Now, in matters of this kind, we would fain make it a standing rule, not to propose or erect any structures for fruits alone but what a market gardener might undertake with a view to profit. Judging Mr. R.'s house, without any farther modifications, we should say that, with sound management, such a house might be made to pay its way. Certainly, if any lady or gentleman choose to erect ornamental or other structures at an expense that would be totally unwarrantable in the commercial gardener, they have every right so to do, irrespective of any advice of ours; we feel it a duty, however, to advise not only sound but economical practice.

It will be known to most of our readers that Mr. Rivers has a beech hedge for a back to one of his orchard-houses. This, although suitable enough for some kinds, in some very sheltered situations, we dare not advocate; those who go to the expense of making a house of this kind should by no means stop short of a proper back to it. We have here to express our opinion in plain terms; which is, that with the exception of Mr. R.'s beech hedge (but a closed back instead, containing ample means for ventilation), the house he has recommended—with, in the main, the mode of culture suggested—is capable of accomplishing most of the objects which gave rise to the project. Let it, however, be observed that, in our opinion, the idea will not rest in this plan alone. It is a question whether the *form of structure* is the very best for general purposes, and whether Hartley's patent rough plate-glass may not be best for the glazing.

There is still another position in which to view this question, connected with interior arrangements, and such is, whether planting-out may not, in part at least, be adopted; for we fear much that the pot-principle—safe in the hands of such men as Mr. Rivers—may possibly fall through in the hands of the novitiate. We have a strong predilection in favour of span-roofs, and we shall therefore take some pains to examine into the form-of-roof question, and report thereon subsequently. Of one thing we are pretty well assured, that if a southern lean-to be adopted, a flattish pitch in the roof will be found the best—say one foot in three for the angle. We must not hear tell of shading; such things, although it may be right in principle, add too seriously to expenses to be lightly added to any invention which boasts its simplicity and economy. And assuredly, if any one should adopt what is called a *sharp pitch*, and use British sheet of a very transparent character, so sure will a case arise for shading. We have great faith, however, that Hartley's rough plate will do away with all such gimcrackery in due time.

We may here draw attention to the floor line of such houses,—its relation to the outer or ordinary ground level. In all those cases where a house is to be self-protective, that is to say, possessing no heating apparatus, a low level is best. We do not know how Mr. Rivers's houses are in this respect, and the plan in his "Orchard-house" does not indicate a ground line, but we should make a point of bringing the front of the roof to within one foot of the ground. These, then, are some of the chief points to be considered as first principles, and it behoves every one to well consider them before making his first essay, for not only is there extra expense attending injudicious or lightly-judged plans, but nearly always, in gardening matters, a corresponding amount of ill-success.

We have been treating now of the orchard-house in its original simplicity and integrity,—that is to say, a glass roof, without artificial heat, for tender fruits alone. So far so good; it remains, however, to see whether any benefits may be derived to at least one portion of the gardening community, by combining other matters of high consideration, albeit they force on us the adoption of artificial warmth. Of such we are assured, and amongst the rest, why not grape culture? Indeed, there are those in society who can only indulge in the luxury of one glass house, and if so, why not have all their *real needs* supplied by a house of this kind? We will examine this interesting question a little further on another occasion. R. Errington.

VARIEGATED-LEAVED PLANTS.

The ink was scarcely dry on my last letter, when I saw two collections of plants brought up to London to be exhibited on the merits of their leaves *only*; some of them were in flower, it is true, but that was thought a secondary consideration. One of the collections was sent by Mr. Jackson, of Kingston, in Surrey, and con-

sisted chiefly of stove plants with variegated leaves, or leaves so different from the usual run, that they would attract the notice of a stranger at first sight. The other collection was composed entirely of hardy variegated plants; more than the half of which are better suited for rockwork than any other way. Two days afterwards, I went to the Kingston nursery on purpose to see all these things at home, and the first plant which took my eye in the show-house was the new *Deutzia gracilis*, which is really a first-rate plant either for the open borders, the sheltered wall, or for forcing early in the spring for the rooms or conservatory. I advise every one to buy it at once, for now it is cheap enough for the million. On going along the "herbaceous ground," which is here very extensive and well arranged, on either side of a central walk, I saw *Ranunculus amplexicaulis*, a good old spring-flowering plant, with milk-white flowers, which I had not seen since 1825, and, on that account, I take to be very scarce; it should stand in the front row of a border, as it grows no higher than a crocus. The white flowers are of the size of a buttercup ranunculus, and the leaves like those of *Rhodanthe Manglesii*, only a little larger. There were several beds of the *White Lily*, with leaves variegated with golden stripes, which had a beautiful effect. There is a great demand for this plant, and every morsel of the roots are propagated every season. The next best variegated plant, if not the best of this class, is the yellow flowering day-lily, or *Hemerocallis flava*, or *fulva*, or *Funkia*, as some people call it, after a German gardener named Funk. I never saw this plant till the other day; but it pleased me exceedingly, and I strongly recommend it to our herbaceous plant friends. It is not in Mr. Jackson's nursery; I saw it at the rooms in Regent-street, exhibited in a collection by Mr. Smith, of Norbiton, in Surrey, and the price is under a shilling. Neither did I see the Cocks-foot Grass (*Dactylus glomerata*), with striped leaves, till I saw it with Mr. Jackson, who sells abundance of it for rockwork. It is nearly as pretty as the old Gardener's-garter, or Ribbon Grass, of days gone by. Another very pretty rock plant is the *Variegated Strawberry*. It is not nearly so strong as those in the kitchen-garden, but all the better for that. It is of a golden variegation, and much better than one I once saw with white edges to the leaves. Then there was a dense mass of a golden *Variegated Ground Ivy*, which, by the way, is no ivy at all, but a common British plant belonging to the Lipworts, and called in books *Glechoma hederacea*. This is as pretty a rock plant as one could have. It makes a dense carpet, and will trail over the stones ever so far in a year or two. *Variegated Balm*, *Thyme*, and *Sage*, are three plants that are well suited for rock and cottage gardens, and are more hardy than the same kinds with plain leaves; they are also adapted for bee-flowers, being sweet, and a little out of the common. I also saw a fine *Willow herb* (*Epilobium Goodenii*) with silver striped leaves, which must look well in the summer, and make a striking object in a mixed border. A variety of *Arabis lucida* has golden variegated leaves, and would make a very pretty low edging plant all the season, or an excellent tuft on rockwork, or in the front row of a mixed border, as would the *Variegated Daisy;* these two, and a fine *Variegated Wallflower*, were exhibited by Mr. Wood, and apart from these variegated plants, he had two plain-leaved plants, which every one should have as pet things; one is *Houstonia purpurea*, a North American Alpine, which one seldom sees now-a-days. It only grows a few inches high, makes a dense tuft, and blooms must profusely in the spring; it belongs to the Madderworts, and requires peat earth to grow it well. The other is a Catchfly, *Silene acaulis*, the prettiest of the whole family. It forms a thick carpet on the ground, and is studded all over with starry pink or purplish flowers in the spring and early in the summer, the whole rising only a few inches off the ground; there is another form of this, with the flowers clear white; these two, and another called *Sagina procumbens*, were always called carpet plants when I was young, because you could walk over them without doing them any harm. I have often stamped them down with my foot, after a hard frost, to fix them more firmly in the ground; and this time last year, we were within an ace of forming one of them into a ribbon border at Shrubland Park, in place of the little *Œnothera prostrata*, but we could not make out enough of it.

As Mr Jackson's collection of variegated plants—I mean those which he exhibited before the Horticultural Society—are chiefly from the stove and orchid-house, and therefore out of my line, I must not enlarge much on them to-day, but shall name them at the end of this letter, and go on to say what other things more in my own way I had seen with him. There was a large stock of the *Dielytra spectabilis* in pots, and in a border close by was a large patch of *Dielytra formosum*, or what used to be called *Fumaria formosa*. This, with *Fumaria* or *Dielytra eximia*, a very scarce plant by the way, are the only two that I think it possible to cross with the beautiful *Dielytra spectabilis*, and I earnestly advise both of them to be tried that way to see what can be done with them. Nurserymen are too busy when these plants are in flower to attend to this branch, but many of them would give a good round sum for a cross seedling from either of these. I fear I shall also be too busy this season to do much with crossing, but I bespoke the two Dielytras from Mr. Jackson, to try my hand on them some other day, and if any of our readers could find out *D. eximia* for me, I would return him a plant of the first cross, if it is not crying chick, chick, before the egg is hatched. The double scarlet currant, *Ribes sanguineum*, and the so-called white variety of it, a pale sort only, were here in large numbers, reminding me of *Ribes Gordonianus*, a cross of my own rising, about which I shall some day tell a sad tale, but now only express my surprise that no one has followed out that scent. *Cheiranthus Marshallianus* I never saw so fine as with Mr. Jackson, in pots, and it is a pity that such a fine thing should be left in any nursery. What a splendid yellow bed it would make late in the spring, if planted in very good soil in October, after the summer-bedders were housed; in short, to treat it as we do wallflowers, what an addition to the road-side gardening it would make. I mean that the plant deserves to be universally grown. It is still a new plant to the million, although it has been two or three years in the trade. Mr. Stark, from Edinburgh, who advertises in our first page, was the lucky raiser of it. I hope he is as lucky in his parentage of it, but I very much doubt; but that does not affect the offspring. It was said to be a cross from a wall-flower by the pollen of *Erysimum Perofskianum*, but that was a mistake which originated in London; before the plant left Edinburgh we were told that it came from a plant which belongs to the same genus as the wall-flower, not from the wall-flower itself, from the pale yellow Cheiranth, *Cheiranthus ochroleucus*, an Alpine perennial from Switzerland. Now, some people may believe that swede turnips will cross with and spoil brocoli or red cabbage, because they are so near alike in their flowers; and we all know that a sport or a hybrid *may come* in a way we cannot account for, once in a life-time; but there is nothing on record to warrant the belief that a true perennial has yet crossed with a true annual, both being natives of the temperate, or of the tropical parts of the earth. Besides, the elaborate dissertations of the elder Decandolle on the *Crucifers*, which cost him a life-time, and which has been generally adopted by most European botanists, must be cast to the winds if this cross is true to the parentage given; and it would be well worth the trouble

to experiment on the two plants again, to prove the point under different circumstances; for after all the dissertations in the world, the natural basis of the affinity of plants can only be proved under the operation of natural laws, by the art and mystery of the cross-breeder. Apart from this, it is often very difficult to say what really separates families and sections of plants from each other, or what degree of importance we ought to give to the characters on which botanists uphold their separation; if two plants cross together, as the Cheiranth and Erisymum are said to have done in this instance, then the two must be included in the same genus, notwithstanding all the logic and botany on earth; then, let us try again to see who are right, the cross-breeders or the philosophers.

But all the crosses in the catalogue must not draw my attention from Mr. Jackson's nursery, till I notice some more of the many fine things I saw there. He has the *Double-crimson Peach*, and the *Double-white* one, and thinks more of them even than I do. He has also lots of another plant which half the gardeners in the country—myself among the rest—do not know how to use—the *Trymalium odoratissimum*, a strong woody plant, introduced from New Holland fifteen years ago, and the way to make the best of it is to plant it out against a conservatory-wall, where the frost can be kept from it; the next best place for it would be against a pillar in a cool conservatory or common greenhouse, to be treated like a *Plumbago capense*. After that, as a large specimen plant for the conservatory, to come in with the China Azaleas, in April and May, but out on a wall it would last probably to August, as did the *Rinchospermum Jasminoides* with me last summer; the two were in excellent bloom and condition before the Horticultural Society, on the 20th of April, from a cool house in their own garden, or rather *our own* garden, as Sir Walter Scott's *factotum* used to say about the baronet's family; for if I can pay up my yearly subscriptions, I shall always have the privilege of calling the Chiswick garden, "our garden." Even without the aid of a hot wall, these two plants may be planted out against walls or pillars all the autumn.

When I hear or read about a new plant, I always want to know something about it which will assist the memory in minding the name, and that is the reason why I try to give an idea of such and such plants to others. Now, almost any gardener will know what kind of plant the *Trymalium* is, when I say it looks like the old blue *Ceanothus*, if clothed in the flowers of *Spiræa Japonica*, only a little more loose in the spikes, and all the spikes not so upright. *Cantua dependens* looked better with Mr. Jackson than I have seen it yet; it grows and strikes like a weed, but we have no hopes of it as a bedding-plant, although one of the finest things that can be seen while it lasts. This nursery has been celebrated for many years for *Cape Heaths*, and they really look splendid just now; I saw lots of the spring-flowering ones, and of *Epacrises*, cut in just as Mr. Fish has been advising lately. Most gardeners give a little extra heat to *Epacrises* after cutting, but here they get none, and no plants can look better. Every bud, down to the surface of the pot, is in growth. Mr. Jackson sent a large consignment of young healthy heaths to North America this spring, packed not unlike the way I recommended for Australia, and I am promised to hear of the result. I live not far from Mr. Jackson, and now that I have got acquainted with him, and access to his grounds and houses, I shall often drop in, like Paul Pry, and see what new plants and new methods are coming out from time to time. I had no idea that such a large stock of *orchids* and stove plants were grown hereabouts, as I saw there; but the best gardeners from the country never fail to see things in London different from the Londoners, so I shall not rest satisfied till I see every nursery within ten—may be twenty—miles of St. Paul's. This will suit me better now, having spent so much money in building, than driving all over the country to see the gardens of the wealthy, as I first proposed and promised myself. D. Beaton.

List of plants exhibited by Mr. Jackson, Nurseryman, Kingston-on-Thames, before the Horticultural Society, on the 20th of April, 1852:—*Anæctochilus setaceus*, most beautiful; *A. setaceus pictus*, fine; *A. argenteus*, two varieties of. *Centrosolæna picta*, quite new. *Maranta albo-lineata; M. vittata; M. glumacea. Pandanus variegatus*, fine; *P. moschata*, another and larger variety. *Dichorisandra thyrsiflora*, a new form of a good old plant. *Goodyera discolor. Dracæna nobile*, a fine new plant; *D. terminalis. Tradescantia zebrina. Caladium bicolor; C. atropurpureum; C. nymphæfolium*, the three might be tried in open ponds, in July, August, and September. *Tillandsia zebrina. Dieffenbactria costata*, the Dumb Cane (*Caladium seguinum* of The Cottage Gardeners' Dictionary). *Tradescantia discolor. Graptophyllum* (*Justicia*) *hortense; G. picta* and *variegata. Eranthemum leuconervum*, very fine, new. *Aspidistra lurida*, curious. *Chirita sinensis. Camphylobotrys discolor. Bartolonia maculata. Adhatoda*, good and new. *Æchmea zebrina* and *picta. Croton pictum* and *variegatum*.

CHINESE CHRYSANTHEMUMS.

I once knew an old gentleman who prided himself on wearing a coat of a particular colour, and made always in the same particular way. Peculiarities are seldom aimless; and a rather philosophic clothier used to say, that a goodly portion of self-esteem was enshrined beneath that quaint-looking garment. Be that as it may, the gentleman himself used to boast, that without ever thinking of such a thing, he had *five* times during his lifetime found himself decked out in the very pink of fashion. The fact is not without its instruction in a gardening point of view. In clinging to plants we loved to tend in our boyhood, we might be wrong in disregarding altogether fresh claimants for popular favour; but we should be quite as much in the wrong if, in prosecuting the new loves, we were forgetful of the old. "The course of true love," as applied to rational beings, never had more ups and downs than classes of plants have experienced, by great attention at one time, and complete neglect at another. Only persevere long enough with your old favourites and you will not only be in the fashion by-and-by, but some fine specimens, striking by their very *rarity*, will make you the instrument of introducing again your favourites to popular favour. Would that there was more of the spirit of that old gentleman among gardeners and the proprietors of gardens, then would our gardens possess more variety. Alas! that the Almacks of fashion in gardening should be so scrupulously followed when propounding the *kind* and the form of the beautiful in vegetable nature alone worthy of admiration.

In our own short practice, we have witnessed several phases of the estimation in which *Chrysanthemums* were held. Some twenty years ago, thanks to the late Mr. Sabine and the Horticultural Society, the care bestowed upon them in many places could not be surpassed in the present time, nor do I think the cultivation in general at all improved. During that period, there have been several ebbs and flows, the former preponderating, until the flow has again decidedly the ascendancy, owing to some lovers of their beauties showing fine specimens of plants and flowers, and thus making them again *fashionable*. What are termed more perfect forms in the flower may now be obtained; but I question if the finest forms will produce such gorgeous effects as the superb white, tasselled white, tasselled yellow, &c., of the olden time, but which are now scarcely, if at all, obtainable.

In some of the earlier volumes, the Chrysanthemum

received a fair share of attention. Those best suited for in-door and out-door decoration were duly specified, and the methods of management. If I mistake not, lists of the best, and the treatment most suited for the small Pompone varieties, have also been given by those who have had more acquaintance with that section than I as yet can boast of. In this article, therefore, I propose chiefly to consider it first as a calendarial addenda, and, secondly, as a medium for introducing part of a confidential communication from a first-rate gardener, whose chrysanthemums last season, taking flowers and plants together, were second to none I had seen,—the leaves being as large and green, hanging over the pot, as the flowers were massive and abundant; the plants appearing bushy from this cause, though each plant seldom had more than three or four stout stems.

In *the north* of the island, if propagation has not been proceeded with, the cuttings may be inserted in a little heat (the points of the suckers are generally used), about four inches in length, cut clean across at a bud, and two or three of the leaves removed, with the buds in their axils. This prevents many suckers rising when growing. To expedite the process, the cuttings may be placed round the sides of small pots, in light, sandy soil, and then plunged. In *the south* of the island this may also be done, though, in a warm place, they would do in a south border, under hand-glasses. We have had as fine plants by propagating in the end of April and the beginning of May as at an earlier period, but then the plant must have no lingering resting time of it. As soon as the cuttings are rooted, which will not take long, the plants should be stopped, and in a few days afterwards potted into three-inch pots, kept close and warm until rooted, and then transplanted out-of-doors, to be raised and potted in autumn. Twenty years ago, I noticed a peculiarity in cultivating fine plants, which, I presume, few would think of imitating now, though some curious people might do so and report the issue. The plants, until far on in the autumn, never were completely exposed, and, consequently, neither from the heavens nor the water-pot had they ever a drop of water on the foliage, and yet they were strong and robust, and of a beautiful green. After the second shifting, they were placed into a box frame, with glass sashes; that frame was raised from the ground all round to admit air freely after the middle or end of June, and the sashes were tilted to admit air also, but never slided. Thus treated, the bloom buds set strong and early. The pots stood upon coal-ashes; the shoots received their last stopping in June; and the roots were watered alternately with clear water and a good thick mixture of two-year-old cow-dung and water from a barrel, where it was allowed to remain several weeks before being used. Little brewing of clear manure-water in those days!

After this first potting, I have tried continuing in pots, planting out in small pots, planting out altogether in a rich open piece of ground, and then taking the plants up again in September, and in all these modes I have had a fair portion of success; but in these latter modes I have found that a *shady* situation must be given to the plants after potting, but not a *close* one—that is, a place with air all round, except on the south side, will be better than a close pit, for in the latter, unless great care is taken, some of the finest lower leaves will go. In such cases, perspiration must be checked by moist standing ground, and the use of the syringe over the foliage, until, by fresh rooting, the plant will stand more sunshine without feeling it. I have also found, when planting out entirely and then repotting afterwards, that if the flower buds were any size, they were apt to be so checked that the smaller buds brought ultimately the best flowers; while, if potted just when they were forming, they occasionally started off altogether. The time of final potting, as regards these matters, &c., I therefore inquired of my friend, whose words I will take the liberty of transcribing, confident that those who will be equally successful will have no reason to grumble.

"With regard to Chrysanthemums," he says, "I can say but little. I have been very successful with them these two years, though I cannot claim any superior way of treating them. However, as you wish it, I will give you my mode of treatment. I take off the cuttings in April, and plant them under hand-glasses on a border. I shade in strong sunshine, but only then. As soon as they show signs of rooting, air is given; a little at first, and more by degrees, until the glasses are left off at night. As soon as they grow a little their tops are pinched off, and shortly afterwards they are potted into 60's, placed in a cold frame, and the lights kept close, with an occasional shading, till they have taken with their pots. Air is then given, and the lights soon wholly removed: they soon grow strong, and fill their pots. I then shift them into 32's, using a very rich soil. They are then plunged in beds in the open ground, to obviate the necessity of frequent waterings during summer, as you know I am very scarce of that element. They receive no further attention, beyond an occasional watering when they seem to require it, till towards autumn, when they have a few sticks put to them to prevent them being broken with the wind; about the end of September, when they are *well knotted* for bloom, they are taken up. They are, of course, rooted through the pots, but seldom to such an extent as to cause any material check. I then shift them into 24's, using about two parts loam, and one of rotten dung; they are then properly tied up, and made ready for housing on the appearance of frost. A slight frost will not injure them if the flowers are not expanded. *By allowing them plenty of air, when first put under cover*, they will retain their leaves, which adds greatly to their beauty. The fresh soil added at the last potting seems to strengthen them amazingly. When they have again filled their pots, and begin to expand their blossoms, they are treated to a little manure-water about twice a-week. I take off a few of the buds when they are *very* thick, but I do not thin much, as I look more to the general beauty of the plants than to the size of individual flowers. I may, however, safely say that I had hundreds of blooms measuring 4½ and 5 inches in diameter. I never stop but once, as some of the late kinds will not flower at all, if stopped too late in the season." Whatever I may get from my friend for thus putting his practice into *print*, our readers will have no reason to complain if they approach his success.

R. Fish.

PROPAGATION OF ORCHIDS.

(*Continued from page* 52.)

Schomburgckia.—A genus of large-growing, handsome plants, which may be propagated in the same manner as the stronger-growing *Cattleyas*.

Scuticaria.—This is a fine plant, somewhat difficult to increase. A safe way is, to divide a tolerably-sized plant in two—fix the parts so divided to short blocks—fasten the blocks into a basket with strong wire, packing them lightly in with rough peat and moss—and suspend the basket sideways, so that the top of the basket will hang vertically instead of horizontally, the leaves of the plants will then hang gracefully downward, and the plants will never become saturated with moisture. Keep them in the warmest part of the Indian house, and syringe frequently; they will soon make fresh growth, and will, if properly managed, flower the second year.

Sobralia.—The roots of these splendid plants are thick,

numerous, and fleshy, very much resembling the roots of asparagus: hence, in propagating them, there is sure to be some roots destroyed by the operation of separating a piece off for the purpose of increasing them. For this reason moderate-sized plants are the best to divide. A nurseryman, to be sure, who has a large plant, will not scruple to break it up entirely at the potting time, and make several plants of it: there is this comfort, the divisions are almost sure to grow. The amateur, however, does not need to be so savage; he may wish only to have two or three plants, either for the purpose of growing them, or exchanging. Let him, then, not spoil his fine specimen plant, but only, on the most convenient side, cut out a small division with two or three living shoots, preserving as many roots uninjured as possible; put this division into a suitable-sized pot, in the right compost, and place it in the stove-house, give moderate supplies of water until fresh roots and shoots appear, when they may be treated like their parents in every respect.

Sophronites.—The large-flowered species of this genus is a real gem, even amongst orchids, and like most other choice small-growing species, is difficult and slow to increase. The only way to propagate it is to wait till two leading shoots are naturally formed and then severally dividing them, and thus forming two plants instead of one. Fasten these to naked blocks, and treat them like established plants.

Stanhopeas.—A large family of free-flowering desirable plants, perhaps more easily increased, and brought into a flowering state in a short time, than any other. They are peculiarly suited for new beginners on that account. Sir Joseph Paxton gives a luminous and useful account of the manner in which a single bulb was treated at Chatsworth, which, for the benefit of our readers, we shall take the liberty of quoting:—

"On the 20th of May I received a small damaged plant of a new Stanhopea; I allowed it to get perfectly dry; it was then potted, and placed in a strong bottom-heat, with a strong heat above; the plant began to grow in about a fortnight, and at the end of July had perfected a new small bulb; the plant was then kept dry for about a fortnight, and was again placed in a strong bottom-heat, and in a temperature never lower than 70°, but often amounting, in the day, to from 90° to 100°. By the end of September it had perfected a second bulb, considerably larger than the first. The plant was again dried on a hot flue for a fortnight, and was removed into a larger pot, and elevated a little above the surface; it was again re-plunged into a strong bottom-heat, and by the end of December had perfected two more bulbs, making four since the commencement. I should here observe the plant had but one bulb when it was received; the plant was then dried for a month, then repotted, and placed, as before, in a strong heat. About the first week in April the plant had made two more perfect bulbs; the process of drying was again gone through, and afterwards it was placed again in a strong heat; it has on it now, August 31st, nine bulbs, made in the short space of fifteen months. This plant was cultivated with a number of other small ones, in a house that could be kept very hot."

Such is the very graphic and minute account of a successful experiment; and, though every one has not such means at command as Sir Joseph Paxton had, yet the process may, in a degree, be imitated by placing such small divisions, whilst they are growing, under a handlight placed upon a warm flue, and having the pots surrounded with moss, which should be kept moist. In this manner we have got many a difficult plant to grow that otherwise would, we fear, have perished.

T. Appleby.

FLORISTS' FLOWERS.

Cineraria *(J. R.)*.—The two pips you sent us are decidedly the best flowers we have seen this season. Petals broad, stout, well overlapping, notch nearly obliterated; colour beautiful carmine, with small white claws; centre purple.

Cinerarias *(G. Bancroft)*.—All the cinerarias you sent are pretty, but none sufficiently novel or good to deserve naming, except No. 5; white, with bright blue tips. Other questions next week.

CULTURE OF ROSES IN POTS FOR EXHIBITION.

(*Continued from page* 66.)

Potting.—In our last number was a selection of roses to be grown in pots for exhibition. It comprises varieties, that by forcing and retarding may be brought to the exhibition tent from May to September, but the potting season for them all, at whatever time they are to bloom, is early in October.

It is well known that roses are propagated both by budding and by cuttings. The best kind of stock for the budded varieties, to grow in pots, as has been said before, is the *Manettii*, and for this reason, that this rose does not send up suckers if the low buds are rubbed off before the cuttings of the stock are put in. Not but that those worked upon the wild rose will grow well enough in pots, but at the time of potting the stems below ground should be diligently examined, and every bud likely to produce a sucker rubbed off close to the stem, as well as the suckers already produced. Even those on their own roots should have every sucker destroyed. Drain the pots moderately well and proportion their size to that of the plants. In general, to bloom the rose well, requires larger pots than for most other plants. Then, some discretion must be used as to the kind of plants selected for this purpose. The budded plants should be what is called "dwarf-worked;" that is, the stem between the soil and the bud or graft should never be longer or higher than nine inches, or at the most, a foot. The shoots, too, should not be long and straggling, but short, stout, not too thickly placed, and as well ripened as possible. Let these points be attended to in choosing the plants from the nursery, and there will be the greater probability of success.

In the operation of potting, prune off any roots that may have been broken or bruised with taking them up out of the nursery rows. Then open the roots from each other, and spread them equally on every side amongst the soil, covering the highest layer about one inch, and leaving about half-an-inch below the rim of the pots. This space will hold water sufficient, when it is most needed, to wet the entire ball of earth quite through. After the potting is finished, place the plants in the cold pit, syringe them frequently, and keep them close, shading from bright midday sun. This will keep the wood fresh and plump, and new roots will soon be made. As soon as this is judged to have taken place, give them plenty of air, and draw off the lights every fine dry day. The tender kinds would pass the winter more securely in the pit, but the hardy ones should be removed out of it, and plunged in a bed of coal-ashes, there to remain till the time arrives to start them into growth. Though they will flower moderately well even the season after potting from the nursery-bed, yet the best season for bloom will be the second year. On that account, it is desirable to pot the first year nearly double the number that may be required for exhibition, unless the cultivator has patience to wait one year before commencing to grow his plants for the exhibition table.

Pruning.—This is one of the most important opera-

tions in rose culture, and requires a knowledge of the habits of at least each class of roses. Whoever, therefore, takes the knife in hand to prune roses, should, as the old proverb says, look before he leaps, or he may fall into the ditch of mistake, the bad effects of which will last for one season at least. It would weary the patience of our reading rose-growers were we to give rules for pruning every variety. Our rules must be general, and the application for each variety left to the thinking powers of the operator.

It is a good maxim, that example is better than precept, and acting upon that excellent rule, we will give a few examples how to prune the rose. In the first place, it must be remembered that roses in pots require a somewhat different mode of pruning than those planted in the open ground, and for the satisfactory reason that they do not grow so strong; yet in a degree the same rule applies, namely, that the shoots of strong growers must be left nearly the whole length, and weak growers be pruned to two, three, or four eyes, in proportion to their strength; and, secondly, that in order to have a succession of bloom to suit the different exhibition days, there must at least be two seasons of pruning, one in November, and the other in March. Remembering these two points, then prune accordingly.

There is, for example, the rose *Fulgens*, it is a strong grower, and if pruned close it will continue to grow and produce few blooms. Now, instead of cutting in close, thin out the branches; that is, cut part of them close off to the old wood, leaving a sufficient number to form a full, compact head. The branches that are left should be those of moderate growth, taking away the very coarsest, and the very smallest, then only just end the shoots that are left; cutting off, perhaps, only two or four inches, as the case may be, according to their strength. Now, this rule applies to all *Hybrid China* and *Bourbon* roses of similar habit to *Fulgens*.

Then, again, others of the same group, such for instance, as *Cramoisie superieure*, and *Mrs. Bosanquet*, being weaker growers, require not only to be thinned-out, but also cut in pretty closely. Also, the groups of *Moss*, *Provence*, *Alba*, and the *Gallica's*, should, almost without exception, be pruned to within three or four eyes. The *Perpetuals* and *autumnal-flowering* roses will bloom well at their season, and when forced to bloom in May, if pruned pretty closely at the season proper for their flowering when desired.

A considerable amount of pruning at the proper season would be avoided, if the roses in pots, and, indeed, in the open ground, were thinned during the season of growth. At that time cut away close to the old wood all the very strong shoots, and all the weak straggling ones. This not only strengthens those that are left, but allows more air and sunshine to play upon those that are left, and thereby the wood will be more perfectly ripened, the buds filled with flower-sap, and the health of the plants preserved. T. Appleby.

THE TOMATO.

Of late many complaints have reached us from correspondents who have been unable to ripen this fruit in anything like a satisfactory manner; and the time being at hand when the plants may, in most cases, be trusted out-of-doors, a few words on their culture and general management will, we trust, be of service to those whose success has not hitherto been in accordance with their wishes: but before we say anything on the rearing and preparing of the young plants, let us examine the situation they are to occupy, which we need hardly observe, must exercise great influence on a plant of such ephemeral existence as the Tomato (or Love-apple, as it is sometimes called). Now, though the favoured cultivator of our southern counties has little difficulty in securing a succession of well-ripened fruit from the beginning of August until the end of October, his less fortunate brother, occupying some cold, bleak situation in the northern part of the island, has to exercise all his skill in order to obtain, perhaps, only a few of the first-formed fruit ripened, or rather only coloured, in a very indifferent way. Now as we know the The Cottage Gardener is read by both the above classes, as well as many intermediate ones, it is easy to see that the treatment adapted to the one can hardly be applicable to the other, we therefore commence with the less favoured one first.

In those gardens situated in a moist, dull locality, and where, probably, shelter is only partially afforded, there the Tomato has to struggle against many difficulties to arrive at anything like a usable condition, unless all the available means be taken that can be to forward their maturity; not the least of which is preparing the plants early in the spring by potting and repotting, so that by the time you are able to plant them out, they are good stocky well-established plants, with a degree of firmness (not succulence) about them, which their partial exposure to the air, &c., ought by this time to have given them; they ought also to be occupying pots six or seven inches diameter, and altogether to present that hardy, robust appearance so essential to their well doing.

Let us next examine the site they are to occupy, which, in this ungenial climate alluded to, ought to be against a south wall or paling, and to possess every other advantage of that exposure.

Now to the planting out, and on doing that judiciously much of the after success depends, and certainly to plant them in the deep rich soil common to wall borders in such situations would defeat the purposes you have in view; therefore, in the place where the plant is to be, scoop out a little of the earth, but not deep, and ram in some mortar-rubbish, or other material that will beat tolerably tight, so as to make a sort of concrete bed, the top of which may be nearly level with the surrounding ground; on this platform or foundation spread your compost soil, and forthwith put in the plants, which will, when finished, stand on mounds. Now the soil we have found best adapted to grow and ripen the *tomato*, was one containing a large proportion of mortar-rubbish, which, checking undue luxuriance, induced fruitfulness. So essential do we consider this substance, that we prefer it to mere enriching matters, even where the prospect of ripening is less uncertain than the cases alluded to. We therefore advise our readers, who have in former years found some difficulty in curbing their plants, even by severe and oft-repeated amputations, to try the effects of a liberal allowance of this far-from-barren substance, and we have no doubt as to the result. We may add, that good sandy loam might form the other principal part of the compost; but decayed turf, leaf-mould, and other open surfaces had better be withheld.

We next shall suppose the plants put in and all going on aright, and a few boughs stuck in front of them will shelter them considerably from the cold nights, should any occur. Water will have to be administered until they get established, which, if all be right, will soon be effected; after which they require but little attention until they want nailing or fastening up, when some stopping and training may be put in operation, which it is better not to delay too long, as no advantage attends encouraging the plants to a large size. We never allow our plants to get more than four feet high, and often much less; and we commence stopping and thinning pretty early in the season; and as the above remarks apply principally to those having to contend against many natural disadvantages, we urge on them the necessity of using the knife very freely.

We now turn our eyes southward, and, by a move quicker than the express train, have left not the *Tweed*

only, but the *Trent*, and perhaps the *Thames* also, to the north of us. Here, having exchanged the "land of cakes" for "groves of nightingales," we shall find most of the difficulties experienced in perfecting this fruit vanish, and to obtain the greatest possible quantity, and in the best condition, is now the object of our wishes. Here the plant may be allowed a little more scope for its roots, and the soil may be of a more generous kind, in fact, it may be planted in the ordinary border soil, in which stone fruits, &c., are growing; unless the situation be damp and cool, in which case, elevating the plant above the surface, as recommended in less genial situations, may be resorted to. But usually this fruit may be ripened in the south of England without the use of walls or other auxiliaries. Plants reared as above may be planted out on any well-sheltered border or open square, and there planted about four or five feet apart, and a stout stake attached to each, to which two, or, at most, only three stems are tied, and kept stopped and pruned the whole summer. They bear and ripen very well, only the late fruit has not such a good chance as when assisted by a wall in autumn, neither is shelter so easily or effectually applied when frosty nights occur; yet considerable quantities are so grown every year around London, the plants while in a growing state resembling so many dahlias, minus the flowers, &c.

Of the kinds grown, the *large red* is the most useful; the *yellow* is also in request with some people, but the other kinds, of which there are several, are mostly grown for novelty. We may here observe, that it is very good practice to save one or two good fruit each year for seed; by carefully laying them on a dry shelf in autumn they will keep a long time, but, after mouldiness takes place, put them in a flower-pot amongst dry sand, which we think is preferable to washing, as we can hardly reconcile that operation being performed without removing some coating or other portion of the seed which it ought not to part with. By selecting the best fruit, the chances are that the produce will improve; at least, that is our opinion, and we have practised it many years.

Sundries.—It is much to be hoped that before these pages reach the reader the late long-continued *dry weather* will have come to an end; rarely, or never, do we remember a spring so unusually dry. Seeds committed to the earth early in March have scarcely germinated; while those sown at a later date have, in many instances, not done so at all, except where artificial assistance was afforded them: besides which, other things have suffered as well. However, we trust the amateur has so managed as to secure a fair share of the most important crops, and has arranged his ground so as to be in readiness to sow or plant anything on it when rain does come. But should the east wind and its dry parching atmosphere still continue, seeds of such plants as *Walcheren Broccoli, Lettuce, Spinach, Cauliflower*, and other vegetables must yet be sown; and after the ground is well watered, let it be shaded with mats, or other opaque body; evaporation will be partially arrested, and the hardening influence of the sun on newly-watered ground avoided. See that no portion of the ground between crops becomes baked or hardened; if so, *hoeing* or loosening the soil will be beneficial. A certain amount of fine mould, on which the sun's rays may act or play, prevents their penetrating deeper, to the injury of vegetation: as it is only on the stiff heavy lands that we see those deep cracks so fatal to the vegetation growing there.

John Robson.

HIVES, ARTIFICIAL SWARMS, &c.

To the attention of all bee-keepers, whether cottagers or amateurs, who love the incidents of *natural* swarming (which so justly claims the admiration of every true lover of the country), and yet would fain improve upon the common practice of bee management, I once for all commend the subject of my last letter, as well as of that which appeared in your 157th number (The Cottage Gardener, page 12, vol. vii.), and with the greatest confidence, seeing that it necessitates the least possible deviation from the cottage system actually in vogue, consistent with a real advance on the bee practices of our forefathers. *Any* hive, of wood or straw, from the common bell hive to that of Mr. Golding's modification (which I hesitate not to say is the *ne plus ultra* of hives), will do perfectly well, and (in one sense) will equally well answer the end in view. When, however, I speak approvingly of Mr. Payne's and Mr. Golding's hives—the former of which I have designated "the best," *i.e. for cottagers of small means alone*—be it understood that I speak *not* of their *dimensions* but of their *shape*, and of the *principle of their construction*. Both of them, in my opinion, are far too small for keeping or breeding stocks, but they are admirably adapted for *prime swarms, intended for autumn plunder*, according to my new system; only, in this case, *two* hives should be used simultaneously,* one set over the other. I consider these hives otherwise as nearly *one-half too small*, and here I have all the old bee-keepers on my side, who tell us, with one voice, that "large swarms" (such as mine *always of necessity* are) "should be put into large hives." A good size for breeding-stocks I consider to be—fifteen inches in diameter by from eight to nine deep, for Mr. Payne's hives; and sixteen inches in diameter at the *broadest* end, converging to thirteen at the base, by from nine to ten inches deep (bars included), for Mr. Golding's hives; *all in the clear*. In those of my own hives which have a moveable top, but no bars, I now place sticks crosswise, as a support to the combs, but *low down* in the hive, say from two to three inches from the bottom-board; this facilitates the process of *driving* (for whatever purpose it may be had recourse to), and obviates all danger of the combs breaking should the hive happen to be too roughly handled in warm weather. Moreover, as I lay great stress on preserving all the *brood comb* at spoliation time, and, in fact, injuring whatever comb happens to contain no honey as little as possible, I sever all the combs from the crown-board of those hives intended for plunder, so as to enable me to scoop out only the *honey-full* part of the combs in the upper part of the hive. It is evident, therefore, that in very large perpendicular-sided hives, without bars, sticks are *necessary*, to prevent the combs from collapsing which are thus severed from the top. After cutting out what comb I want the top is fastened down again, and the hive set over some one of my keeping stocks for at least three weeks, at the end of which time the young bees will be found all hatched out, and the remaining comb nicely cleaned out; the hive is then laid by in a dry, cool place, till another year, when it is given to a prime swarm, and saves the bees a great waste of labour and materials. Of course, I only recommend this practice to the experienced amateur, to whom my present remarks are addressed.

I have learnt with pleasure that not a few of your readers are fully purposed to make trial of my *artificial* system of managing swarms, as well as of the other plan, in spite of Mr. Newman's inconsiderate assertion, that of such swarms it is "certain (?) not one in a hundred will ever succeed." With all my respect for Mr. N. as a naturalist and apiarian of the old school, I must beg to differ from him entirely on this point. Either he has been a very awkward manager of the artificial process of swarm formation, or he has never given it a fair trial, for, of a certainty, I have had abundant experience that artificial swarms are equally, if not more, successful than those formed naturally.

If your readers will refer to pages 119, 120, vol. vii., of The Cottage Gardener, they will find a detail of a really simple, if not the best plan I know, for making artificial swarms out of hives of every variety, *without* bars. It is unnecessary for me to repeat what I then wrote, but I would observe, that if the piece of brood comb be placed in a glass over the top hole, there should be a piece of wood fixed in it from top to bottom, for the bees to hang from *en masse*, in order to enable them the better to keep up the requisite heat for maturing the royal brood; also, the glass should

* The *second* hive should be given a few days after the establishment of the swarm and the construction of comb below.

be well covered up with no stint of warm flannels, as a protection against the external air.

In hives *with bars*, supposing them to be of the same diameter at top, the bars being transferable from any one hive to any other hive, the process of artificial swarming becomes a matter of still greater simplicity. The stock to be operated upon should be turned up on a fine morning when most of the bees are away from home, and after a careful inspection of each separate comb, and the choice of one which seems to contain suitable brood, that comb must, by the help of a long knife, be gently severed from its attachment to the *sides* of the hive. Next, carefully replace the hive in its usual position, and proceed to remove the top, preparatory to taking out the selected brood comb attached to its bar; on taking it out every bee upon it should be carefully swept back into the old hive, and a fresh bar put in the place of the one taken away. Now arrange the extracted brood comb (which must be kept perpendicular, and gently handled, or it would very likely break off from the bar) in its fitting place in the new hive, having certainly ascertained that it contains *very young*, fresh-hatched grubs, *and eggs* if possible. The new hive must now be made to exchange places with the stock out of which the swarm is to be made, removing the stock to a distance of at least several yards—indeed, the farther the better for the first day or two, until the bees have got reconciled to the loss of their queen, and have set themselves in earnest to procure another. There wants no *driving* at all in this case, as Mr. Payne advises at page 134, vol. vi., of The Cottage Gardener; in fact, such driving is more than superfluous, it will, if I mistake not, hazard the prosperity of both prime swarm and parent stock, should the old queen ascend into the upper hive with her subjects, and she is generally among the first to climb. The grand secret of successful artificial swarm management in the easiest manner is, to make the *prime swarm* rear a young queen, leaving the old queen behind *if not too old*, and still in full vigour. Where, however, she must be changed, the swarm must be managed à-la-Scudamore, after the plan expounded in the *English Bee Keeper*.—A Country Curate.

P.S.—The swarm of March 23rd last, which invaded one of my hives, was a case of real desertion after all. The parent hive is now quite empty of honey and bees.

THE MISTLETOE.

As much inquiry has of late been made regarding this wonderful production, and some have questioned the fact of its being made to grow in our northern counties, I beg to say, that the largest and finest plant of mistletoe I ever saw was growing in a garden in the "county of Northumberland." It was, when I saw it, appropriating to itself the whole, or nearly the whole, of the energies of an apple-tree, on which it had been inserted, and but a few of the sickly, diseased branches were seen protruding through the mass of green by which it was shrouded. Now, though there may be doubtless larger specimens than the above in some parts of the south of England, yet I have never seen any in the counties bordering on London; the reason is, that its abundance renders it no novelty there, and no means are taken to preserve it, except it perhaps be on some scraggy thorn on a gentleman's lawn, but there the prevalence of high winds, and other casualties, give it such repeated prunings that it is seldom seen very large; besides which, there is a barbarous custom of cutting every available piece worth cutting at Christmas for decorative purposes. This destruction is carried on everywhere except in the precincts of the mansions of the opulent, and very often there also, so that it is only such pieces as are beyond the reach of climbing-boys that escape such ruthless invaders, but what is beyond their reach is seldom destined to get to any size. The tufts growing on the extremities of the twigs of lime and maple trees, especially the former, suffer so severely from high winds that very often basketsful may be gathered under them, broken by its violence, as the mistletoe is very brittle, and easily broken. The cause of the one noted above getting to such a size is owing to its sheltered position, and the care taken of it by its skilful proprietor. Depredation in that way being there unknown, the plant is held in some veneration, but how long it will continue to thrive on the ruins of the tree it occupies remains to be proved, but its present appearance would intimate that a heavy fall of snow would curtail its own dimensions very much, a casualty which I believe has occurred more than once before. In winding up this account, I cannot add anything to the already known methods of propagating this singular parasite, except that I have known the seed bruised and stuck by its pulpy parts to a limb of the tree, and there grew, only it did so very slowly for a number of years; I may add, that an old leaf was laid over the seed, and then loosely tied, simply to keep the latter in its place and secure it from birds, &c. I need hardly observe that apple, hawthorn, crab, and lime trees, are the most common ones producing it, and, more sparingly, the maple. It is reported to grow on the oak, but I have never seen it there. A young orchard is seldom attacked with it, but it haunts the latter days of an old one with an inveteracy which the knife of the pruner in vain wages war against. I think it seizes on young limes sooner than any other young trees, but when some enthusiastic cultivator wishes to introduce it, let him try it on some old hawthorn, apple, or crab, and, though I cannot say much from experience, I yet have no doubt but he will be successful.—S.N.V.

PRACTICAL OBSERVATIONS ON THE MANAGEMENT OF BEES.

By Henry Wenman Newman, Esq.

(*Continued from page* 41.)

ENEMIES OF BEES.

Are wasps, mice, moths, hornets (not much), lice, ants, large greenhouses, large black headed tomtit, sparrows, spiders, cobwebs, and, last of all, bees themselves, and *mankind*.

Every creature has its enemies, and the little bee is not an exception. The autumn is the time that the *wasps* are most troublesome and destructive to bees. I find the brimstone squib at their nests the most radical cure. It is very dangerous to place bottles near the hives full of sugar and water, as the bees often get caught and killed themselves. I often destroy from 40 to 50 wasp nests within 400 yards of my apiary; and for a penny a nest, boys may be found who will "squib out" as many more at further distances.

As to the *mice*, traps are the best things to catch them. The bee-master should try and place his hives, boxes, and bee houses, in such a manner, as to prevent these vermin from getting at the hives. One winter, I had two fine stocks destroyed in straw hives by mice; they gained an entrance, and in severe weather they destroyed nearly the whole of the bees, and ate the honey and combs.

The large *Black-headed Tomtit*, or Bee-killer, as he is called in Hampshire, is another deadly enemy in the winter only. This bird is not so apt to attack wooden boxes as straw hives, for the tomtit likes to gnaw away the straw at the entrance. Two winters ago, I caught 16 of these tomtits in the common mouse-trap, baited with a little suet or bacon, which this bird is as fond of as an alderman is of turtle. These birds may also be caught in common bird-traps.

Although there are some *hornets* in the neighbourhood, I never found them attack my hives; no doubt, if they were as numerous as wasps, they would be deadly enemies.

Large greenhouses in the spring are very dangerous traps for bees, as they enter them and seldom find their way out alive; after trying the flowers, they fly to the nearest light, and remain at the windows until they die of exhaustion.

In changeable weather, in summer, when the barometer is low, if you are in doubt about rain coming, consult the bees. I have often done this from nine to eleven o'clock; if the bees are *very active*, there will be no rain for some hours, if they are *very quiet*, storms may be expected.

I cannot leave this subject without again declaring, with great regret, what is the worst quality of the hive bee, viz., its inordinate love of plunder. When bees have got into this bad habit in a large community, the only way is to remove the thieves, or destroy them. When a dog takes to killing sheep, he seldom leaves it off; so it is with the bees,

they will plunder their weak neighbours for the sake of plunder, until they have got all their honey, and the stock is destroyed—even at a time when there is plenty of honey to be gathered. The larger the number of the hives, the more they are apt to be plundered, and it is a difficult matter to know what to do. I have found a stock increase in a few days a dozen pounds from plunder; in this case, if you can watch them, the only way is to remove and give them the benefit of a "brimstone match," for if they are not removed and destroyed, they carry the system on until they become hereditary thieves. It is to be regretted that insects endowed with so much sagacity should be addicted to such bad habits. Their attack on the wall-fruit in a bad honey year is nothing to this propensity; being a great deal in my bee-garden, I kill every thief I can see at the hives. They are easily discovered by their buzzing flight; and in case of a battle, the thief is *always trying to escape, and acting on the defensive.* Even for this reason alone, hives should never be placed near each other; the nearer they are, the more likely to create plundering,—the really besetting sin of our insect friends. I have remarked elsewhere, that wild bees never rob each other's nests, nor do they fight at all.

The best way to prevent plunder, is to find out by experience how many hives the country will carry, and not to exceed this number; overstocking is one of the great causes of robbery amongst bees. The poor cottager who keeps only one stock, or not more than two, is seldom annoyed by his bees plundering each other's treasures; so that amongst bees, the "*separate system*" is the best, and the fewer bees are kept close together the better. The bees in large communities, particularly where they are placed on benches from 10 to 15 together, are by far the worst enemies to themselves, and destroy more stocks than all the host of enemies enumerated. I must differ with that excellent writer, M. Gelieu, in charging the *swallow*, or *swift*, with killing bees. I have been a close observer of the swallow and swift for many years, and have also shot them often, but never found a bee in their stomachs or mouths, nor did I ever observe them catch bees in their flight; those that I have been cruel enough to shoot, I have always found with their mouths filled with a small sort of flies.

I have never seen *hornets* attack the hive-bees, nor did I ever see them attack the wall-fruit; they seem to devour insects, and they are particularly fond of those on the bark of an old elm-tree. September 12th, 1847, I killed several hornets with a small stick: these hornets were busy in the crevices of a very old elm pollard-tree. I had a nest of hornets in a hay-stack within 50 yards of my garden, and was never in the least annoyed by them; they are much more easily killed than wasps.

The proverb, "that nine hornets will kill a horse," is not often verified; if a horse were tethered to a tree in which a nest of hornets were, it might happen—I never heard of it; indeed, a hive of bees would kill a horse under the same circumstances. I repeat that, although they were numerous last summer, these insects did me no mischief, either in my apiary or to the wall-fruit. I found them every day round the butts of some old elms, either catching insects or partaking of the exudation from the bark.

Everybody knows the value of destroying a *queen wasp* in the spring; at one plum-tree, the leaves of which had some exudation from an aphis, I killed 50 in the course of a week in May.

Spiders destroy a great many bees in detail; they make their webs more frequently round boxes than straw-hives; these ought to be examined and swept every week. In my straw hives I have seen them weave their webs inside: a bee is caught in these, and although it is not immediately killed by the spider, dies of exhaustion in a short time, being unable to extricate itself.

To prevent *ants* getting to a hive, soot should be placed round the feet of the stands.

The *moths* are most destructive. If they get fairly into the combs there is no cure. I read an account of an early swarm, on the 31st of March; on inquiry I found that the moths had taken possession, and *the early swarm* was a total desertion of the hive!

Sparrows will very often kill bees which they catch in their flight, when they have young ones to feed, but it is a rare practice with them.

Mr. Huish reckons *wild bees* amongst the enemies of hive-bees! this is too bad, as these wild bees interfere very little with the hive-bees, and never plunder either their neighbours or each other; there is only one species, the *Apis terrestris*, which pastures on a few of the same flowers, particularly the lime-tree, which this bee, and the *Apis lucorum*, are very fond of.

I do not admire Mr. Huish's desire to destroy all the "Bombinatrices" for the sake of their honey; it is cruel, to say the least of it—the wild bees never plunder each other's nests. Like the hive-bees, they are very inoffensive; and, in their way, are an example of industry and forethought worthy of imitation, so much so, that Solomon might have said—"Go to the wild bee, thou sluggard, consider her ways and be wise."

GAS-TAR WALKS.

In No. 183, you say you shall be glad of any additional information on the subject of "gas-tar walks." I have used it largely, with highly satisfactory results. Having a great number of walks in my garden and pleasure ground, from six feet to sixteen inches in breadth, probably about two miles altogether, I found the cost of keeping them perfectly free from grass and weeds a very serious item of labour, besides doing the walks much injury, by more or less breaking up the surface whenever they required a perfect weeding. I therefore applied the tar as follows, having first swept the walks quite clean, and got the surface hard by rolling. I chose a dry, *warm* day, and poured the tar over them, as thinly as practicable, spreading it with a flat stick or the back of a rake; the walk being warm, the tar runs very freely; clean gravel was then scattered evenly over the tar, so as to cover it entirely, and all was finished.

Care should be taken not to let the tar touch the edging, as it kills it. It ought to be kept about one inch from it. The result has exceeded my anticipations; much that I did was about two years since, and not a weed is to be found; in fact, I do not think all my walks have since cost me 6d. to keep them, except a light sprinkling of fresh gravel as the old gets by degrees imbedded. I estimate the cost at not more than one year's expense of keeping the walks neat and clean without the tar.

The walks are as hard as if covered with concrete, and when walked on, give a crunching sound as if frozen hard. They are much admired, and are almost always dry; in fact, in an hour after heavy rain they appear, and really are, as dry as ever.

The smell of the tar disappears in a few days. The effect of applying tar is to make the walks beautifully level, as it lies in the little hollows that may be in them, which being covered with the gravel, all becomes perfectly smooth and even.—S. Y., *Dublin.*

POULTRY ACCOUNT.

I send you, as I promised, a statement of my poultry receipts and expenditure for the year 1851. The profits you will see are *very small*—in fact, *nothing;* but eggs and fowls are very cheap in this neighbourhood, and you will see by the prices attached that they are charged at a very low rate. Eggs according to season (our only customers being shopkeepers), and fowls sold into the house at 2s. 6d., ducks at 3s. 6d., *a couple.* The year 1851 was one, in this district, *most unfavourable* for hatching and for rearing both chickens and ducks. This was probably caused by the long continuance of dry weather. Many fowls, of all ages, drooped and died off quite suddenly. The charge for barley-meal is high; I had a servant who wasted it in spite of my directions as to quantity.

Guinea fowls, I think, cannot be advantageously kept with fowls; they are too quarrelsome. My dogs (which are very friendly with the rest of the poultry) always begin to bark when they hear the Guinea hen, and always fly at her; her noise appears to make them quite restless. I think the difference between the Guinea cock and hen is as great almost as between other kinds of poultry,—the prominent wattles of the cock bird, his upright carriage, his rapid running with his wings half-opened and rather drooping,

and his dancing about on tiptoe when vexed (when driven away from his meat) betray him at once, *i. e.*, when full grown; as chicks, I am not aware that there is any perceptible difference. I keep now the Chinese breed of fowls, exclusively, with a few Dorking hens, whose eggs I use for setting in preference to the Chinese, finding the chickens stronger, earlier in feather, and sooner ready for table, and fatter birds, than the thoroughbred Chinese; but after the first cross they become good-for-nothing. I shall be happy to send you any further statements from time to time, if you think it worth your while to accept them.

Stock January 1, 1851.

One Chinese cock, hatched 1849; 1 Chinese hen, hatched 1849; 2 Dorking hens (one barren), 1 white hen (common sort), 1 silver pheasant hen, 1 brown hen, age not known—bought for sitters; 4 white Dorking hens, hatched 1850; 3 pullets (common sort), hatched 1850; 4 Chinese cocks, hatched 1850; 4 Chinese pullets, hatched 1850; 4 Dorking cocks, hatched 1850; 3 Dorking pullets, hatched 1850; 10 chickens (killed), hatched 1850; 1 pair Guinea fowls (killed), hatched 1849; 1 drake, hatched 1849; 1 duck, hatched 1849; 5 ducks, hatched 1850.

Total of Layers in 1851.—Hens, 19; ducks, 6. Total, 25.

RECEIPTS.

COLLECTED.		SOLD OR USED.							
	Eggs.	Eggs.	Price.			Chicks. & Ducks	Price.		
			£	s.	d.		£	s.	d.
January	49	28	0	2	2	5	0	8	0
February	92	83	0	5	3	1	0	2	0
March	269	258	0	12	8	1	0	1	6
April	266	140	0	7	0	4	0	5	0
May	270	250	0	11	0	2	0	2	6
June	248	166	0	7	9				
July	192	142	0	7	1½	14	0	19	3
August	143	158	0	9	5½	13	0	17	0
September	86	92	0	5	6	12	1	0	0
October	18	77	0	6	3	9	0	16	0
November	39	18	0	1	6	8	0	15	6
December	47	69	0	5	9	13	1	3	6
Totals	1719	1481	4	1	5	82	6	10	3

Eggs collected	....	1719
Ditto sold	1481	
Ditto set	140	
Total	1621	

Leaving 98 eggs unaccounted for—that is, broken, used for nest eggs, &c.

	£.	s.	d.
Total received—Eggs	4	1	5
Chickens and Ducks ..	6	10	3
	£10	11	8

PAYMENTS.

	£.	s.	d.
Barley-meal, 80 stones, at 1s. per stone	4	0	0
Bran, 18 sacks, at 5s. per sack (2 at 4s. 6d. per sack)	4	9	0
Barley, 7 bushels (at 3s. 3d., 3s. 6d., and 3s. 9d. per bushel)	1	5	3
Oatmeal, 4 pecks and ¼ stone	0	6	6
Rice, 4 lbs.	0	0	6
Sharps, 9 stones	0	7	6
Total	£10	8	9

	£.	s.	d.
Total received	10	11	8
Do. paid	10	8	9
Profit	0	2	11

A Durham Vicar.

[This is an encouraging account; for the produce of eggs and chickens is small; the prices charged for them very low; and the prices charged for the food very high. We wish others of our readers would send similar accounts.—Ed. C. G.]

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of The Cottage Gardener. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

Deodara Cedar—Pampas Grass.—A correspondent, (*J. W. W.*), writes as follows:—"In answer to J. C. W's enquiries respecting Deodar Cedars, 10 feet in height, I cannot do better than refer him to Messrs. Luccombe and Pince's collection of hardy Coniferæ, in their gardens near Exeter, as more likely to afford him such specimens as he requires than any I have ever seen elsewhere. Mr. Pince has a number of Deodars 8 or 9 feet high (I am writing from memory), at from one to three guineas each; the price depending not only on the height, but the regularity with which they are furnished with branches. He has still larger specimens of *Pinus insignis*, and, I must add, that all his large plants are plunged in crates or boxes, and regularly shifted to ensure a safe removal. Can any correspondent oblige me with information as to how I can procure either seeds or plants of the *Pampas Grass?*"

Rookery.—In answer to the query of *J. H. B. S.*, page 50, another correspondent, (*H.*), says, "I am of opinion, from constant observation, that the cause of decrease in the rookery mentioned is not the absence of the smell of gunpowder exactly, but of the killing effects of the shot. Rooks will naturally return, year after year, to the same nest in which they reared their young the previous spring; so also will the young rooks of the former year try to take possession of the nest in which they were reared. The consequence of never thinning them off for several springs is a continued fighting among the young and old rooks at the time of building for the possession of particular nests, to the great detriment of the colony. No doubt *J. H. B. S.* has often witnessed such fights in his rookery, which not unfrequently end in the disputed nest being entirely deserted."

T. J. C. says, "In answer to *J. H. B. S.*, I beg to say that I have been a gamekeeper, and have had the care of a rookery; and I believe that the best plan is to shoot the largest part of the young ones yearly, for when too many are let fly they not only get into danger and get killed themselves, but the old ones, in trying to take care of them, get killed also. In *building pigstyes for breeding sows*, if the bottom of all the walls were constructed thus: ⅂ there would not be half the danger of the sow lying on the young pigs against the wall, for by this mode the hollows would not be large enough for the body of the sow to get in.

Prolificacy of the Common Pheasant.—*Upwards and Onwards* says:—"In answer to a correspondent, who enquires 'Whether I ever knew a common pheasant lay so many as 50 eggs in one season?' I beg to state that about eight years since, the late Sir Charles Goring had confined in a pheasantry, for the purpose of producing eggs to be hatched by bantams, a cock, and two hen pheasants (common), and in one season they numbered 103 eggs between them! I have read somewhere of another fruitful pheasant, bent on population, which, in one season, produced 74 eggs! With the exception of the *silver* bird mentioned in my article, we never had one lay so many. Pheasants confined usually lay a greater number of eggs than those at large, though possibly there even *events* do sometimes happen which, were they observed and made known, would tend considerably, like other *events*, to enlighten society."

Angle of Greenhouses (*J. Murdoch*).—Your house must either be lofty, or have rather high upright glass in front, to be a lean-to, have room for paths, and also for a stage eight feet at its base in the centre. This we should have judged better of by a section. To the first question, whether a platform or a stage will hold most plants? we say (not forgetting the old planting problem), undoubtedly the latter, if plants of moderate size are to be put out. If all large ones, it will make less difference, though even in a lean-to house more light will be given. Such a house is best fitted for holding great quantities of small plants, and then in the second place, instead of raising the angle of the stage above 40°, we would reduce it to little more than 35°, so as to approach nearer to the angle of the roof. The use of the house should regulate the angle of the stage. Even for largish plants two platforms would be superior to one. Platforms are best in span-roofed houses.

Greenhouse (*A Subscriber*).—As far as we can judge, you are acting perfectly right. The house standing north and south will be best, but we have only just found the plan, and will return to the subject more in detail.

Pits, with Tank, and Lead Pipes (*An Anxious Beginner*).—We have not time before this goes to press to examine the plan in vol. iv., as you have not mentioned the page; but we have no doubt that with or without *tan* the pit will answer, but we will give a full answer to your questions next week.

Fruits for North of Ireland (*I. N., Omagh*).—Your case is well stated, and we answer your queries *seriatim*. Your clearance is good, but you will surely require some organic matter in addition to the "gas-lime." You must pursue a high course of culture through the summer, and plant your trees in October. The climate of the north of Ireland is well known to be unfavourable to the production of our tender fruits; not from want of warmth so much as from excessive moistness and deficiency of solar light. "Never despair," however, seems to be your motto. Let us advise you, in addition to a cautious selection of fruits, to *plant all your fruit trees above the ground level.* The evil you must guard against is the tendency to produce too much spray, and you must, therefore, keep the roots well in check. Pray look at our "platform" articles, in back numbers, the advice in which is too copious to repeat here. Let the bottom of your prepared stations be only one foot below the ground level, planting on the surface, and covering to one foot above the level. You may at once lay in some maiden soil from old rest soils;

the more turf the better; weeds, herbage, and all. Pile this in a sharp ridge until September, and from this ridge chop down the material with a sharp spade. Let the soil be a free loam, rather sandy; one-half of the natural soil may be mixed with it. You may plant Strawberries on your south border, keeping clear of the platforms. Your three-feet border is fearfully narrow. Plant your *Raspberries* as you say, by all means. Your selection of fruits is, on the whole very good. The following Peaches we advise, in addition to *Royal Kensington*, viz.:—*Acton Scott*, *Royal George*, and *Galande*. Nectarines: *Murray* and *Etruge*. Apricots: the *Shipley's* and *Moorpark*; all on a *south* wall of course. Of Pears, you may add *Beurre diel*, *Fondante d'Automne*, *Jargonelle*, *Dunmore*, and *Glout Morceau*: these on *east* or *west* walls. Of Plums: add *Rivers's Favourite*, *Quielsche St. Martin's*, *Royal Hative*; *east* or *west* wall. Of Cherries, also, place a *May Duke*, a *Late Duke*, and an *Elton*, on *east* or *west* wall. Add to your Apples, *Lamb Abbey Pearmain*, *Eldon Pippin*, and *Sturmer Pippin*, as table fruit; and *Mank's Codling*, *John Apple*, and *Dumelow's Seedling*, as kitchen fruit.

Stove Vine Roots (*X. Y. Z., Liverpool*).—Your vines planted inside the house by all means, only take care to have the front wall on arches, so that one portion of the roots may go freely out, where a prepared bed of soil must help to add to their fertility; the latter thoroughly drained, and a trifle lower than the former; the whole, floor-line and all, a good deal above the ordinary ground level. Your proposed interior arrangements are good. We are not in possession of any infallible remedy as to the ants; but, as a *pro tempore* proceeding, we would try the effect of a monthly application of gas tar or train oil; a band or strip drawn along the bottom of the wall. Surely your trees in the neighbourhood must be much infested with aphides or thrips; the ants frequently abound under such conditions. According to the old adage, "remove the mildew, and you'll be rid of the mushrooms."

Dahlia Roots Grub Eaten (*J. M.*).—Are you quite sure that it is the *wireworm* that destroys your newly-planted dahlias? They do not generally attack that plant, but prey more upon carnations, picotees, pansies, and pinks; yet, for want of other food, they may infest the dahlia. Examine them again. If it is the veritable wireworm, it is of a yellow colour, with numerous brown rings or joints, and is as tough almost as wire; hence its name. If the worm is uniformly brown, it is what is called the *brown grub*. In new ground like yours this frequently abounds to a most destructive extent. We suspect this latter is the one you are plagued with. There is no way of destroying it but by searching almost daily round each plant, and destroying all that are found. The true wireworm must also be destroyed by similar means; but he is a more cunning insect, and dives deeper into the ground. You might try a little soot laid closely round the stem down to the roots, and up level with the surface. Plant also a few cos lettuces near your plants; they prefer them to the dahlia.

Cactus (*J. A. E.*).—Your globe cactus, called *Cactus complex*, is unknown to us by that name. The cause of its not flowering is because you keep it constantly growing. These plants all want a rest, by keeping cool and dry for four or five months, and then in spring a smart heat, and plenty of moisture, to cause them to grow and flower. You will do right to rub off the young globules as they appear. They are produced instead of flowers, and if allowed to remain you will never have any bloom. If you have convenience, set them out-of-doors in the hottest months of summer, in front of, and near to a south wall, this will ripen the wood, and cause them to produce flowers, but do not suffer them to receive heavy, long-continued rains, and remove them into the greenhouse early in August, placing them close to the glass, and giving very little water through the winter. They are then almost sure to flower.

Bulb not Flowering (*E. W. K. H.*).—The juice from the decaying leaf you sent nearly obliterated the writing in the letter. You should have sent it in a tin box separate from the letter. It is a leaf belonging either to *Hamanthus tigrina*, or *H. puniceus*, bulbs from the Cape of Good Hope. It does not flower because the bulb is not large enough. It should be, to produce bloom, quite as large as a man's fist. The flowers are produced in umbels, springing from between the two large leaves. It should, like all other bulbs, have a season of rest and of growth. It should be grown in a strong, rich loam. The flowers are showy and handsome, but do not last long in bloom.

Hoya carnosa Diseased (*Ibid*).—Your *Hoya carnosa*, with brown, thickened, and wrinkled leaves, has suffered from its removal into the cold border. It should have very little water till it begins to grow. You may prune it in partially now, leaving some young shoots to grow. It will most likely recover during the summer. Put in some cuttings, and raise new plants for fear it should not recover. The blotching on the leaves is canker, caused by a loss of roots, and exposure to bright sunshine.

Acacia (*J. S., Highworth*).—The scrap of *Acacia* you have sent, we think is a leaf of *A. longissima*. You cannot make it flower down the stem unless you allow no other plants to be near it. It is the being crowded with other plants that causes it to draw up to the roof, and only flower there, because it is naturally a tall-growing, rambling species.

Phalænopsis Diseased (*Orient*).—Your *Phalænopsis* has had two spots like blisters on two leaves. These spots have spread, and the parts have become corrupt and decayed. You have taken it out of the basket, and placed it on a block; cut down the old flower-stem, and cut away the decayed parts of the leaves. You could not have done better; we should have done so too. It has since then sent forth another flower-shoot. You ask what is the cause of the spots; and should you allow the new flower-spike to remain? The cause of the spots is vitiated juices taken up out of the sour, sodden sphagnum, and, perhaps, aggravated by too much moisture in the air for a diseased plant. The flower-spike may remain, as it will not prevent the plants making fresh roots and leaves; dip the block in tepid water, but do not wet the leaves, especially the injured ones, unless the wounds are quite healed.

White and Crimson Cinerarias (*R. H.*).—*Queen of England*, *Rosy Morn*, *Lettice Arnold*, *Loveliness*, *Marianne*, and *Electra*, are six cinerarias, the best of their class. They have each, as you require, a white eye, edged with plum or crimson.

Verbena Venosa (*Verax*).—It is now too late to sow *Verbena venosa* to flower well this year. If sown early in March it would bloom from the end of July. March cuttings, or rather, April cuttings of the roots, is just the way we recommend it to be used every year; but "root cuttings" is nothing more than "dividing the roots." There is little chance of getting the *Plumbago larpentæ* to flower sooner. It is better suited for Australia or Natal than for this climate.

Saxifraga Sarmentosa (*Only a Fiddler*).—The right translation of *sarmentosa* could not be given in our *Dictionary*, because we have no English equivalent. The strawberry is sarmentose, and so are all plants which form "runners" like it, as does this saxifrage. A better translation would have been *trailing*. Full exposure to the sun at all times; very little water and heat in winter; and a pot not too large for the size of the roots, and to be potted only once in three years, are the chief points in its right management. We shall send your address to "first fiddle," perhaps he will call on you about the growth of *cacti*.

Lobelia bed (*T. F.*)—There are *scarlet*, *purple*, *white*, and *blue* lobelias; which of them do you want a match-bed for? probably the dwarf blue one, as you name the Anagallis as likely to answer that purpose. The old small blue-flowering Anagallis will suit you best, and it will flower as late as the Lobelias, *if your soil suits it*; but all the anagallises are like spoilt children—they will only do what they like, and where they like.

Bedder for a Large Bed (*Novice*).—For "a largish bed, blue, purple, or white," take *Salvia patens* for blue; *Petunia Devoniensis*, or some such petunia, for purple; and *Nyctagyniflora Petunia* for a white, unless you could buy the *Shrubland white Petunia*, which every one admires so much in the beds at Kew. *Delphinum Barlowii* is not fit for a bed; but is a good "herbaceous plant" nevertheless. *Lobelia ramosa rubra* we do not know. *Centranthus macrosiphon* use in patches, and mark how you like it.

Hive disliked by Bees (*G. Wintle*).—Mr. Payne has had all his hives for these forty years made of rye straw, whenever it could be obtained (but rye is but little cultivated in Suffolk), therefore, that cannot be the reason of your bees leaving the hive; we would recommend your cleaning the hive inside with a dry, hard brush, and then placing it inverted in the sun for some days, and a day or two before the bees are put into it, let a few pieces of clean white comb be placed at the top, as an inducement for the bees to commence working.

Nutt's Collateral Hive (*John Smith*).—Yes, put the swarm when it comes, into your Nutt's Collateral Hive, if you like it—but it is altogether bad in principle—and adopt the plan recommended by Mr. Payne in his Calendar for May, by placing the swarm as soon as hived, where the old stock stood; carry the old stock some distance away. By no means invert it, but allow it to swarm. You must not expect any thing from your second hive. If it should so far recover itself as to send out a swarm, treat it exactly the same as the first.

Carnations and Pinks (*A. B. C.*).—July and early August is the best time for *layering Carnations*; and for *piping Pinks*, the end of May or early in June. See what Mr. Beaton says to-day about *Dielytra spectabilis*.

Moving Vine (*E. D.*).—You must not move a vine into your greenhouse now, unless you can obtain one growing in a pot. This you might do from some of the London nurserymen, and then might turn it out into the border without injuring the roots.

Moveable Greenhouse (*S. O. L.*).—It is very easy to have a greenhouse so constructed that you may move it away with you. You must not have it fixed, except by screws to the walls or foundation. The *white net* used for lady's caps, &c., is the best material for protecting ripe fruit from wasps.

English Names of Grasses (*Ibid*).—The English names of those mentioned at p. 46 of the present volume are as follows:—*Alopecurus pratensis*, Meadow Fox-tail; *Dactylis glomerata*, Rough or Common Cocksfoot; *Festuca duriuscula*, Hardish Fescue; *F. elatior*, Tall Fescue; *F. pratensis*, Meadow Fescue; *F. rubra*, Red or Creeping-rooted Fescue; *Lolium Italicum*, Italian Rye-grass; *L. perenne*, Common Rye-grass; *Phleum pratense*, Timothy or Cat's-tail; *Poa nemoralis*, Wood Meadow-grass; *P. sempervirens*, Evergreen Meadow-grass; *P. pratensis*, Smooth-stalked Meadow-grass; *Medicago lupulina*, Common Yellow Trefoil; *Trifolium pratense*, Common Red Clover; *T. pratense perenne*, Cow-grass, or Perennial Red Clover; *T. repens*, White or Dutch Clover.

Books (*A. B.*).—We do not know anything about the books you mention.

Glass for Vinery (*H. C.*).—We can state positively that Hartley's rough plate glass is to be preferred for glazing a vinery.

Seeds.—*Mr. J. Morton, of the Union Workhouse, Macclesfield, Cheshire*, has a few seeds of *Black Barley*, *Himalayah Pumpkin*, and *Vegetable Marrow*, of superior qualities. With a view of spreading the different kinds through the country, he will gladly divide the seeds with any of our readers, who will communicate with him, to the above address, and enclose a stamped envelope, to defray the postage.

German Paste for Birds (*A. B. C.*).—We are told that the following is an excellent recipe:—Pea meal 1lb., blanched sweet almonds 8 oz., lard 2 oz., moist sugar 2½ oz., adding the yolk of an egg, and a shred or two of saffron improves it. Beat it into a smooth paste, and rub it through a colander to make into grains. In a dry place it keeps good for several months.

Woodlice (*S. Y.*).—They *are* mentioned in The Cottage Gardener's Dictionary. Look under the word Oniscus and Woodlice.

Manuring Roses (*A Subscriber*).—You may give them liquid-manure twice a-week; mix a little super-phosphate of lime with the soil, and put mulch over the roots.

Name of Plant (*Collina*).—Yours is one of the pine tribe, and we think *Pinus Douglasii*. It is a hardy tree. We can never undertake to plan gardens.

London: Printed by Harry Wooldridge, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published by William Somerville Orr, at the Office, No. 2, Amen Corner, in the Parish of Christ Church, City of London.—May 6th, 1852.

WEEKLY CALENDAR.

M D	W D	MAY 13—19, 1852.	WEATHER NEAR LONDON IN 1851.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
13	TH	Old May Day.	30.299—30.242	58—31	N.E.	—	12 a. 4	40 a. 7	2 45	24	3 54	134
14	F	Orange-tip Moth seen.	30.335—30.291	57—27	N.E.	—	11	41	3 3	25	3 54	135
15	S	Beech flowers.	30.255—30.152	64—29	N.E.	—	10	43	3 20	26	3 54	136
16	SUN	ROGATION SUNDAY.	30.099—30.041	68—46	S.W.	05	8	44	3 37	27	3 53	137
17	M	Barberry flowers.	29.962—29.945	69—48	S.W.	—	7	46	3 54	28	3 52	138
18	TU	Walnut leaves.	29.881—29.849	63—40	S.W.	10	5	47	4 14	29	3 50	139
19	W	Saintfoin flowers.	30.071—29.834	63—37	S.W.	04	4	48	sets.	●	3 47	140

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 64.8° and 42.5° respectively. The greatest heat, 85°, occurred on the 17th in 1833; and the lowest cold, 26° on the 15th in 1838. During the period 109 days were fine, and on 66 rain fell.

IN our 4th volume, page 347, in sketching a few notes relative to Dr. Stephen Hales, we observed that his work on *Vegetable Staticks* was "the first giving correct views of Vegetable Physiology;" and how important such correct views are to the cultivator of plants is nowhere more remarkably shown than in the writings of his contemporary, BATTY LANGLEY. This gentleman, who was a practical gardener, says, in the preface to his *Pomona, or the Fruit Garden Illustrated*, published in 1729—"It is very seldom that our nobility and gentry have any fruit truly good, except by an accident, when Nature herself has acted the part of a judicious gardener, and the reasons thereof wholly unknown to the gardener under whose direction she has been. But this is not the direct fault of gardeners, for as there is no one of them now in England (the ingenious Mr. Miller of the Physic Garden, at Chelsea, excepted) that knows, or ever thought, of crudities being contained in the juices of fruits, or that such crudities are discharged by perspiration, very few knowing this meaning of the word, they are not to be blamed for what they never knew." Now, to remove this ignorance, and to demonstrate the importance of the correcting knowledge, was one of the objects of the volume before us, a volume of which it is not too much to say, that it contains less of error, and more of valuable information relative to the culture of fruits, than any other work that down to that date had issued from the press. Our space will not permit us to cite many passages in proof of this opinion, but the three rules following, deduced from scientific experiments, and confirmed by practice, are evidence of the enlightened contents of the volume. "1. Displace all forward buds by rubbing them off when they first appear, and then the whole nourishment will be distributed to the necessary branches. 2. As the growths of the several branches advance, keep them nailed to the wall, but be sure that the distances between branch and branch are never less than the length of their leaves when fully grown. 3. The nearer branches are laid to an horizontal position the velocity of the sap is the more retarded, and the nearer to a perpendicular position, the more free; therefore, branches inclinable to luxuriancy may be checked by being nailed horizontally, and those that are weak helped by being nailed perpendicularly." We might greatly increase these unexceptionable quotations, and still further demonstrate Mr. Langley's knowledge of pruning, by a detailed reference to his drawings and statements of the wood upon which the fruit of each species is borne, and the guidance thence to be drawn for the exercise of the pruner's knife. Nor need we stay our extracts there; for there are abundance deserving quotation relative to the light thrown by science upon the trenching and other management of the soil. Of one statement we should like to obtain a confirmation or refutation from experiments made upon soils of various textures: it is this—"I have made divers experiments in great variety of soils, to discover the quantity of moisture that Nature hath provided for the support of plants in dry seasons, and find that the greatest quantity is always contained in the second foot below the surface; which is an undeniable direction for the depth of soils." We have not specified all the merits of the work, and among our omissions are the very numerous engravings of fruit which are sufficiently accurate, in most instances, to enable us to discover by them the names of varieties we still possess.

Though more known to his contemporaries as an architect, for he brought before them his extravagant notions of building most urgently, yet Mr. Langley had better skill as a gardener, and his other works on our art are worthy of consideration even now.

The first of his publications appeared in 1726, under the title of *Practical Geometry applied to the useful arts of Building, Surveying, Gardening, and Mensuration*, and so useful are some of his problems, when applied to geometrical gardening, that we think them desirable to be republished in the pages of THE COTTAGE GARDENER, and before long we shall endeavour to introduce some of them.

In 1728, he published *A sure method of Improving Estates by Plantations of Oak and other Timber Trees, Coppice-Woods*, &c. In an advertisement to this, he gives notice that "his services may be commanded to any part of Great Britain and Ireland," and that he undertook "the laying-out and planting of gardens in general, after a rural and more grand manner than has been done before."

He argues upon the importance of new plantations to supply the great deductions made in our woods by the fellings to supply our navy; and gives experiments after the manner of Mr. Hales, to show the moisture trees imbibe and transpire; but the work treats more upon the cost of planting, and the art of measuring the trees, than upon their culture. His attempt in this volume to alter our spelling of the Hawthorn into "Heithorn," raised from "the Heis," instead of Haws, was an error as unsuccessful as Mr. Kemble's to induce his countrymen to alter the pronunciation of "ach" and "Rome."

He mentions that Mr. Thomas Green, nurseryman of Brentford, endeavoured to obtain a patent for engrafting the English upon the Dutch elm, whereby its head is much improved; but it was ascertained that Mr. Evelyn had recommended, and Mr. Furber, of Kensington, had practised this mode, and the patent met that fate which we hope all patents will meet that endeavour to monopolise any improvements connected with the cultivation of plants.

In the same year, 1728, he published *New Principles of Gardening*, or the *Laying-out and Planting Parterres, Groves, Wildernesses*, &c. There is an appendix detailing the names and medicinal properties of the tenants of the kitchen and physic gardens.

He begins by declaring "our gardens are much the worst of any in the world," and that "there is nothing more shocking than a stiff regular garden." His remedy was "to furnish designs that are truly grand and noble, after Nature's own manner;" he includes geometrical diagrams, republished from his work of 1726, and the garden plans are quite as formal, but on a larger scale, as those which he derides. His plans of kitchen-gardens, and his culture of their contents, are the best portions of the book.

In 1748, the Commissioners for building Westminster Bridge having selected a Swiss architect, Mr. Langley attacked them for such preference, in a publication he entitled *A Survey of Westminster*. In this he gave a drawing of such an arch as he recommended, and hung up a Swiss under the arch! He might have had some ground for complaint, but he hurt his cause by showing too much prejudice and resentment. Although the Commissioners may have been wrong in employing the Swiss architect, it is not so clear that the substitute should have been Mr. Langley. Horace Walpole says—"I must mention a more barbarous architect before I come to the luminaries of the science. This was *Batty Langley*, who endeavoured to adapt Gothic architecture to Roman measures; as Sir Philip

Sidney attempted to regulate English verse by Roman feet. Langley went farther, and (for he never copied Gothic) *invented* five orders for that style. All that his books achieved has been to teach carpenters to massacre that venerable species, and to give occasion to those who know nothing of the matter, and who mistake his clumsy efforts for real imitations, to censure the productions of our ancestors, whose bold and beautiful fabrics Sir Christopher Wren viewed and reviewed with astonishment, and never mentioned without esteem. Batty Langley published some other works, particularly, *An accurate Description of Newgate, &c.* 1724. *A Design for a new Bridge at Westminster*, 1736; *A Reply to Mr. James's Tract on the same subject*, and an useful one on the prices of work and materials for building. He also invented an artificial stone, of which he made figures: an art lately brought to great perfection."

Mr. Langley died on the 3rd of March, 1751, and as he lived, so we concluded that he had died at Twickenham, but an intelligent friend says:—"I have made every search it was possible to find the tomb, or the least trace of Batty Langley; his very name I tried to find associated with some part of Twickenham, but all without success. I read every tomb in the churchyard. I engaged the sexton in a search through the 'old burial ground,' but could find nothing relative to the subject I was in quest of. The 'new burial ground' being only of recent date, I did not attempt to survey."

We know that we shall not plead in vain to our readers in behalf of an object most worthy of their bounty, that object being *Mr. William Gardiner*, a naturalist, who has ministered to their instruction and amusement. We had occasion to notice favourably his "Twenty Lessons on British Mosses," and we again recommend that, and all his works, for they are all excellent and cheap, to public attention. But we would not have liberality stop there, but let every one who has even a shilling to spare send it to this suffering student of nature. The smallest contribution will be received for him by *Mr. James Scrymgeour*, 11, *Reform Street, Dundee*, who favoured us with the following circular; we say favoured, because nothing gives us more satisfaction than being placed in a position to aid the meritorious.

"I beg to inform you that Mr. William Gardiner, Botanist, Author of 'The Flora of Forfarshire,' 'Twenty Lessons on Mosses' (First and Second Series), 'Rambles in Braemar,' &c., has been, these several weeks past, confined to bed, rather dangerously ill; that he and his boy are in extremely destitute circumstances; that in consequence of the death of his wife last year, he has no one but a hired person to attend on him; and that Dr. Osborne, the medical gentleman, who has kindly volunteered his services, is of opinion that, if ever this humble, but enthusiastic naturalist recover, it will be a work of considerable time, and assistance is therefore necessary. I had previously received £1 from Colonel Kinloch, £1 from Sir John Ogilvie, Bart., 10s. from William E. Baxter, Esq., 5s. from Richard Gardener, Esq., of Dudhope, and 5s. from Professor Balfour. This prompt and liberal supply is about exhausted. Dr. Osborne and Professor Balfour have suggested to me that I should write at once to parties to whom Gardiner is likely to be known. I respond; but, as my leisure time is limited, I hope this mode of addressing you will be excused. Referring you to my friend George Lawson, Esq., F.B.S., Author of 'The Water Lilies,' Clerk to the Royal Caledonian Horticultural Society, and Curator of the Botanical Society's Museum, Edinburgh, and hoping to hear from you at your earliest convenience, I am, &c."

FORSYTH MSS.

In the latter part of 1789 Mr. Anderson became a married man, and the following extract from a letter, dated St. Vincent's, May 2nd of that year, is an example of an ingenious round-about way of preparing his friend for the announcement, and of defence of the intention. Such circumlocution, and such defence were needless, and we never could yet make out why marriage is about the only act of a man's life which he invariably defends before its wisdom is attacked.

MR. A. ANDERSON TO MR. FORSYTH.

The Natural History, in general, of these Islands, God knows when I shall be able to accomplish. I am preparing for it as fast as I can; if my health and strength continue, perseverance and time will make amends for the want of means, and I have no fear of performing it.

I find my constitution is not bettering, but its decay depends solely to the many hardships it has suffered, and not to anything malignant in the climate, for it is far from being so disagreeable as is generally supposed. It is true, a constant sameness remains the year throughout; but the variety of scenes in a small compass, and the various dispositions of nature in them, make ample amends for the agreeable vicissitudes you experience in nature. Perhaps there are few parts in Europe more healthy, or where the inhabitants, who in their younger days destroy not themselves by dissipation, live to a greater age than in these islands. Man, alas, is the most forbidding object in them, for he seldom appears to fall in his place on the scale of existence, but oftener as an animal, without the limits of nature. Trampling on its sacred laws, he throws behind him all laws, divine and civil, except so much of the latter as suits his convenience and interest, or what he is forced to for the general interest of the society he is in. While he launches into the depth of debauchery it need not be surprising that, as he despises morality and religion, their possessors are subjugated to contempt and ridicule.

The chief cause of the degeneracy of young men from Europe to these new settled islands is, the bad example every moment before their eyes, particularly disrespect to religion and neglect of the Sabbath day, and also the want of that subordination among the different classes of mankind you have in Europe. Here there is no discrimination, except a man is poor, then he is no companion for the rest; if a man is rich, he may have the principles of a devil, he is respected; the most atrocious crimes admit no disrespect to him that has money, or nominal property, often, only; and as most people that come to this country are for some time in a dependant state, to gain favour and interest they imitate the profligacy of their superiors, and soon fall into their modes of thinking and acting, that in a short time the actions which at first were repugnant to their conscience become habitual to them. From this account, which too generally holds to be true, you will easily conceive that a philosophic or sober mind has little satisfaction except in the contemplation of nature; that the generality of society must be disgusting; and that the less connection with them the better; and it really is the case, for in society abundance to deprave the morals may be found, but seldom anything to better them.

I am so far happy in my present situation that I can mix with the world or retire from it as I please, which cannot be the case with one that has the least connection or dependence on the country; but, thanks to God, my subsistence is entirely from home, and not depending here, therefore I have no occasion to cringe on or solicit the favour of any one. In no other situation but that I am in could I enjoy a moment's satisfaction in the country; I hope gratitude shall never be obliterated from my mind to them who were the instruments of placing me in it.

Let society be never so bad, a man cannot always be solitary; he must sometimes go into company for relaxation to his mind, that it may with more vigour return to its pursuits. As there are exceptions to all general rules, so are there here some men of good principles, and whom I esteem, who show every disposition in their power to serve

me, but they are but few. So situate, you must allow an agreeable companion a great blessing, and I have some intention of taking one for life (I mean a wife). I think I know one who, from her good nature and sense, will make me happy; she has no money more than myself, but as it never adds to happiness I regard it not—if it pleases God to give me competency, with health, I want no more. I am confident I can live much more comfortable married than in my present situation, and with much more economy, and it will be the means of making me more settled to my studies, having company at home I shall have no occasion to seek it abroad; and when sickness and infirmity come on a man, it is an unpleasing thing to have no one to take care of him. And, finding my lot is to this unpleasing country, I must make myself as happy in it as I can.

Marriage is no common ceremony in these islands, and attempts to it are often ridiculed and contemned, as a substitute for it is as general as infamous to decency and morality, as also diametrically opposite to the express commands of the author of nature, that is, the keeping mulatto and negro concubines; four or five of them is no uncommon thing in the same house; a numerous offspring of coloured children is the consequence: in my opinion no pleasing family. This promiscuous intercourse among all colours and characters is as common here as lawful connection between the sexes with you, and I can tell you that I am the only exception to it in the Island of St. Vincent; I have always regarded it with detestation and abhorrence, and ever shall do. I am often ridiculed for not having a black wife, indeed, many keep them with an economical view, in taking care of a house better and more honestly than a black man, and also a great saving in washing, making, and many other things; washing alone costs me a guinea every lunar month. However, all these difficulties I gladly bear in preference to acting a part so disgusting to my inclinations.

Nothing worthy of extract occurs in the correspondence until 1793, the year in which Captain Bligh, commander of the unfortunate *Bounty*, touched at St. Vincent's to deliver a portion of the bread-fruit trees collected from the Society Islands, on the second voyage he made for the purpose. His first voyage, when he was turned adrift in the ship's launch by the mutineers, occurred in 1789.

The following letter is dated "Botanical Gardens, St. Vincent, February 17th, 1793."

MR. A. ANDERSON TO MR. FORSYTH.

You no doubt before this have heard of the arrival of the bread-fruit ship, Capt. Bligh, and a beautiful cargo he brought. He is a man of great ability, and certainly merits much. His arrival was some months sooner than I expected, and, therefore, you may conceive I was, and still am, much hurried. There are about three hundred bread fruit plants thriving, with all the other Otaheite fruits and useful plants, and several from Timor and other parts. I sent on board above four hundred different species for them, and had I expected the ship so soon many more would have been ready. She remained here only seven days, and the confusion to me was so great, in landing and shipping such a number of plants, that it was almost too much for me, nor permitted me the time to search among the sailors for shells, and other curiosities of Otaheite, which I much wished on your account. Capt. B. brought none himself, his sole attention being engrossed in the plants; he even applied to me for shells and other matters for his friends in England.

GOSSIP.

A correspondent points out that we last week spoke of a *yellow dahlia* as a rarity. This error of haste only appeared in a few copies, and those who received them will know that it is a *blue* dahlia that is the "monster" that has not yet been discovered.

The vote of the House of Commons refusing to grant a Committee to inquire into the question of retaining *The Crystal Palace* in its present position, only decides that it shall not remain in Hyde Park. This is of very little consequence so that it is re-erected in the immediate vicinity of London. This is almost certain of being effected, and then our purpose will have been gained; we care not whether it is on the east, west, north, or south side of the metropolis, so that it is *close* to one of those sides. Before leaving this subject we must observe upon the gratifying coincidence that, as Sir Joseph Paxton raised himself from the rank and file of gardeners, so Sir William Cubitt, the engineer selected to watch over its erection, is similarly meritorious, as having mounted from the anvil to his present high position; he began life as a mechanic in the employment of Messrs. Ransome and Co., the agricultural implement makers at Ipswich.

We recommend to the attention of our readers the following hints by Mr. Robert Baker, of Writtle, in Essex, on *brewing beer from White Silesian Beet-root.* which appeared in *Bell's Weekly Messenger.* For keeping to brew with in the summer months the kiln-drying is desirable, but for brewing from September until April, we know of no reason why the undried, fresh slices, may not be employed. We know that one of the best of the home-made wines, Parsnip Wine, is made from the undried root. Mr. Baker says;—

My produce last year was from 10 to 16 tons per acre, whilst the mangold-wurtzel was from 16 to 24 tons in the same field. The beet should be planted closer than the mangold-wurtzel, and perhaps would yield a greater crop by leaving double the number of plants. The leaves of this plant are much preferred by cattle, and the roots left in my garden for seed have had all the crowns picked out by small birds, while they rarely, if ever, touch the mangold-wurtzel. The seed may be procured from any of the respectable seed merchants.

The planting will be sufficiently early if effected by the 12th of May, though the last week of April would be preferred. The after culture is the same as that pursued with mangold-wurtzel; the leaves will repay the whole expense of pulling and collecting the roots.

The process necessary to convert it for brewing should be effected early: the middle to the end of October is most suitable. After thoroughly clearing from dirt, the roots should be sliced with a Gardener's patent sheep turnip slicer, and spread thinly upon a barn or malting-floor, and thoroughly turned over for three or four days or more, until the moisture is partially evaporated; they then should be gradually dried upon a malt or chicory kiln, taking care not to burn them in the process, as the colour of the beer, as with malt, depends entirely upon this process being carefully conducted; when dry and crisp, it may be removed and kept in a dry situation for use. The process of brewing is as follows:—If combined with malt, I brew 12 bushels of malt, and mash it the first time in the ordinary way. I then add 18 bushels of the dried root for the second wort; from this a third wort is taken, and the whole is put to fermentation at 45° to 50° Fahrenheit, and turned separately or together; 1½ lb. of good hops to each bushel of malt being added, and a bushel-and-a-half of the beet being used. The wort is boiled in the usual way; from this I obtain seven hogsheads of beer, which in three months is quite clear and ready for use.

Or, I brew with the beet-root alone, putting a bushel-and-a-half instead of each bushel of malt; but I do not find it quite equivalent to a bushel of malt when used alone, although when combined with malt it is so, but two bushels would be more than equivalent. The beer brewed entirely from the beet, if properly managed, is quite equal to that brewed from malt and beet, and is first ready for use; is

about the colour of London porter—quite as bright, and, as most persons state, quite as good.

One ton of beet will produce from 16 to 18 bushels of dried roots, the cost of drying about 12s. per ton. Some did not cost so much; but the maltster objects to dry more under that price, as it requires longer time and a stronger fire than malt to effect the object well.

A correspondent, signing himself "Amateur," says:—

"Your correspondent, Anster Bonn, in The Cottage Gardener for last month, has proposed questions of great interest to most lovers of Cochin China and other pure breeds of poultry. *When and where is this Metropolitan Poultry Show to be?* To advance the affair one step, will some kind, public-spirited gentleman draw up rules, and allow his name to be used for receiving communications, promises of support, subscriptions, &c.?"

We shall be glad to receive such communications, and will readily co-operate in furthering the plan.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Barton-upon-Humber. First show 14th July (*Sec.* C. Ball.)
Botanic (Royal), May 19, June 9, 30.
Caledonian (Inverleith Row), Edinburgh, June 3, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, May 13, June 15, Aug. 26.
Clapham, July 8, Sept. 11.
Chiswick, June 12, July 10.
Colchester and East Essex, May 26, at Mr. B. R. Cant's Nursery; June 23, at Mr. J. Taylor's, West Lodge, Lexdon Road; Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Derby, May 26, Aug. 4.
Durham, June 16, Sept. 8.
Forfarshire (Eastern), June 9 (Forfar); July 21 (Brechin); Sept. 15 (Arbroath).
Guildford, June 16 (Millmead House).
Hampshire, May 18 (Southampton), July 1 (Winchester), Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hexham, Sept. 15, 16.
Hull, May 27, June 24, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), June 24, Sept. 9.
Lincoln, May 25, July 27, Sept. 14.
Liverpool, May 20, June 24, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), May 25, June 8†, 22, July 13†, 27, Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Mid Calder (Parish school-room), July 9, Sept. 10.
National Tulip Society, May 27 (Birmingham).
North London, Sept. 14; Nov. 23, Chrysanthemum.
Northampton, May 25, Tulip; June 29, Rose and Pink; July 27, Carnation; Sept. 27, Dahlia.
Oxfordshire (Royal), May 25; June 23; July 29; Sept. 23. (*Secs.*, C. Tawney, and W. Undershell, Esqrs.)
South Devon Botanical and Horticultural, May 18; July 13; Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal) May 13†, 20, June 17†, 23, July 15†, 21, Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
South Devon, May 18, July 13, Sept. 6.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Turriff, June 11, Aug. 6, Sept. 17.
Whitehaven, July 9, Pinks; Sept. 17, Dahlias.

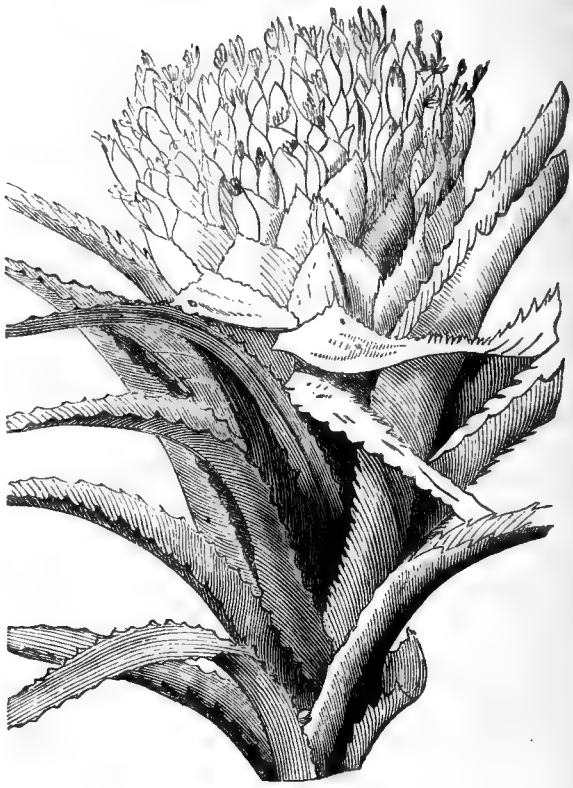
POULTRY SHOWS.

Agricultural Society (Royal), Lewes, July 12.
Cheltenham Monster Show, June 3. (*Secretaries*, Messrs. Jessop, Cheltenham.)

† For seedlings only.

THE LONG-LEAVED BROMEL.

(*Bromelia longifolia.*)



A natural order of plants, having a peculiar aspect and constitution, is named Bromelworts after this genus. This order includes the delicious Pine-apple, the gay *Æchmeas*, the rigid *Bilbergias* and *Pitcairnias*, together with the graceful moss or lichen-like *Tillandsia usneoides*, pastil, or Indian moss, which hangs down from the branches of trees in tropical woods from Mexico to the Brazils, and others, but originally all natives of the American continent and adjacent islands, where they have been highly prized for their various uses, as well as for their half air-plant-like habits in the gardens of the curious.

The genus *Bromelia* was founded by Linnæus, and in it he enumerated the Pine-apple, which has been since very properly divided from it, and made another genus, called *Ananassa*, by Gærtner, a German botanist. The Bromels, or Bromelias, are now, therefore, confined to ornamental plants, of which the subject of our present notice is very showy, with rigid, narrow, milky-green leaves, two feet long, well armed on the edges and points with toothed spines, and, like the generality of the order, they are channelled. (*Paxton's Flower Garden*, ii. 139.) The flower-spike carries a head of gay flowers, of a bright rosy hue, issuing from narrow spiny bracts, of a deep crimson colour. The plant is a native of Guiana, whence it was recently introduced, and was exhibited for the first time, before the Horticultural Society, by Mr. Henderson, of the Wellington Nursery, Edgeware Road, London. It was first noticed in Rudge's *Plantæ Guianenses*. All the Bromelworts belong to the 6-*Hexandria* 1-*Monogynia* in the Linnæan system. B. J.

Propagation and Culture.—This is a very showy plant while in culture, and is one of those accommodating ones so

general in this order. It is increased by suckers only, unless it seeds, and if it is indulged in the moist heat of a stove it will grow, flower, and look well and healthy under any treatment, from that of the pine-apple to the melon cactus. With the more liberal treatment, however, it will look all the handsomer. D. Beaton.

VINES UNDER GLASS.

(*Continued from page* 18.)

The importance of Vine Culture (seeing that every person in easy circumstances, who loves gardening, has his greenhouse vinery,) is second to that of no other fruit. Our last paper on the subject was *Greenhouse Vines*, and it will be well, we think, to direct attention to this class for awhile; for, go where we will, questions are constantly "popped" about their management.

By the middle of May, of course all bedders, and other supernumeraries, will be removed from the house to other quarters, where they will cool down, or harden off for ordinary purposes. The body of the greenhouse will, therefore, be occupied thinly with select articles, intended for specimen culture; no two touching. The front shelf, to be sure, if there be one, may form an exception; here the more delicate and dwarf kinds may be congregated somewhat more closely, for there is more light, they are nearer the glass, and enjoy occasionally a more free atmosphere; this shelf is, moreover, little hindrance to the vine dresser.

It was emphatically observed at page 18, that an exceedingly free circulation of air is necessary in vineries of this character. Now, in order to pursue such practice with safety, a hardy habit must be engendered betimes in the vines; a habit superinduced, if we may take a liberty with phrases, from the period of "breaking." Vines thus handled will not fear a puff of wind; indeed, those out-of-doors are obliged to endure more than a puff. And not only the vines, but most of the pot things enjoy a liberal ventilation; they speedily become more sturdy and robust. The same course of practice cannot, and ought not, to be carried out in the greenhouse vinery, and in that where vines are forced. If, indeed, the ill-judging manager should, in a moment of "vaulting ambition that o'erleaps itself," attempt to carry out high-forcing with plant-growing, he must lay his account with second-rate grapes, and third-rate plants. Still, in such structures, with such objects, a compromise can be effected; and we must advise all those who thus practice, to use fermentative material over the vine roots, if outside, *until* the middle of May.

Vines, under any mode of culture, enjoy at certain periods a high temperature—indeed, it is almost indispensable for their health; and the question arises, at what period in the greenhouse vines' summer history, maximum temperatures may be encouraged with most benefit to the vines, and the least damage to the plants beneath? We do not say that a high temperature occasionally, say of 75° to 85°, is indispensable, but merely that it is of much benefit. Out-door vines, we know, have not such benefit secured to them; but then we do know that the free exposure to light and air which they enjoy, without any glass intervening, has a most beneficial tendency to solidify the wood, and, by consequence, induce health and fruitfulness. Perhaps, from the beginning to the end of June would be an eligible period in which to allow occasionally liberal advances in the thermometer; that is to say, allowing the question to be hampered by the pot plant culture. This period will, in the main, include the completion of the first swelling and part of the stoning process; and as soon as the grapes begin to colour, we would not allow them maximum temperature, unless accompanied by the most liberal admission of air possible—air all night. As soon as the colour and ripening qualities are decided, some little advance may be again allowed; and when the fruit is all cut, maximum temperatures may again be resorted to—if compatible with the plant culture—even until the leaves begin to turn a little yellow, when, if previous proceedings have been judiciously taken, our natural autumn weather will of itself complete the wood ripening process.

One collateral consideration must here be noted by the amateur, and that is, at what period during the operator's daily practice may the highest temperature be indulged in? Without hesitation, we answer from two to five in the afternoon. Of course not persisting thus except with plenty of sun-light. Artificial heat can only be warrantable in a very unseasonable summer or other unusually inclement period, and then more to dissipate damps and purify the atmosphere of the house than otherwise; for if it be not solar heat, it can be of no benefit to the vines, but otherwise, except for the above reasons. However, as to the dissipation of confined or corrupted air—those who ventilate freely will have little cause to fear in the generality of seasons, especially if they do as we advise, establish a slight circulation in the air of the house all night.

The *mode* of ventilation may now be adverted to, for that, in early spring, especially, is a matter of importance. Of course, it may be presumed that every house has a regularity of ingress and egress; the first of which, as a general principle, is best at the *lowest* level in front (where it should pass immediately over a portion of the flue or piping), and the other at a *high* level at the back. These modes of ventilation, to be complete, should be capable of graduation, without which, they are exceedingly defective, as the operator, in dealing with extremes of temperature and cutting winds, should possess perfect control over them. In studying this part of our subject, the unpracticed should consider the character and tendency of a draught, and its application to the objects in view. Draught, by an established ingress and egress, may be made a heat-disperser, a purifier, and a moisture-robber; indeed, the last two are almost one and the same thing. As a heat-disperser, use a liberal ingress with the maximum amount of egress. As a moisture-robber, rapidity in circulation is, we think, best; and this may be effected by throwing the back ventilators liberally open, and admitting a moderate amount in front. These things may be aptly compared to the running of water in a channel: widen it, and the action is sluggish; compress the channel into a very narrow compass, and the current becomes lively. Just so with ventilation; and our readers will do well to bear this simple figure in view.

Let it be well understood, that all such operations are liable to be modified by the character of the weather, and of course must ever be attempered in a judicious way, according to the objects in view. No man can lay down rules for daily ventilation. A watchful discretion is at all times necessary, and the operator must keep strictly in mind the reasons for his practice at the period of action. In early spring, when everything is arousing from a state of lethargy, when plants have been by necessity placed under what has been aptly termed a coddling system for many weeks, the most liberal ventilation must be used on every possible occasion to refresh the plants; and where vines are on the rafters, to keep back the branch action until the sun's advancing power has forced some amount of action on the root to meet the demands on the foliage when perspiration commences. Without such, or an unusual fund of vital powers, the buds are sure to grow weakly, and in an ill-conditioned way—the bunches, perhaps, having a tendency to run into tendrils. Again, when the vines unfold their beautifully-organised and delicate foliage, susceptible of the slightest damage from almost any extreme, then must much caution be exercised in air-giving; not that the

vines or plants have less need of a circulation, but that their susceptibility has so much increased.

The two great opponents to be dreaded are—cutting winds and frosty air; and when either prevails, especially the former, the manager must operate more at the back of the house than the front; getting rid of surplus heat, rather than encouraging a draught with a too free liberty to rake the whole interior area. We have been rather explicit, perhaps tedious, about these little matters, but they are intended for little gardeners, although such may be two yards high. R. Errington.

MENZIESIA ERECTA, AZALEA AMŒNA, &c.

As far back as 1836, I entered a strong protest, in Loudon's *Gardener's Magazine*, against that division of the Heathworts proposed by the late Mr. Don in the Edinburgh Philosophical Journal, and which he adopted in his edition of Miller's Dictionary, because I knew, by actual experiments in crossing them, that some of the genera, at least, were not natural; and that the most that could be said about them would only show that the several groups thus elevated to the distinction of genera were natural enough merely as distinct sections of one genus. At that time most of these objectionable genera were adopted by Decandolle in his great *Prodromus*; and Mr. Loudon followed him in his great work, the *Arboretum Britannicum*. Since then, however, the lamented Endlicher made a far better arrangement of the natural orders than that by Decandolle, and in it he discarded most of the new spurious genera into which the Heathworts were divided, as did also Dr. Lindley subsequently in his *Vegetable Kingdom*; and, as if to prove the adage that it is not safe to fall into bad company, we excluded from The Cottage Gardener's Dictionary a genus of Heathworts that was named a hundred years ago, so that the name of a most beautiful hardy, or nearly hardy Heathwort, which I am just going to recommend for universal cultivation, cannot be found in our Dictionary; and this notice may spare some letters asking us about it from our Dictionary-*readers*; for our Dictionary is not such dry reading as some of them, after all. The name by which this plant is known about London is *Bryanthus erectus:* derived from *bryon*, a moss, and *anthos* a flower; because the original plant is a little trailing thing, growing so low on mossy ground, that the flowers appear, at first, as if actually produced by the moss itself. There are two species known having this habit, natives of Siberia and the north-west coast of America. The London plant, *erectus*, grows upright, as the word means; still it is a very low evergreen bush, and one of the prettiest things you can imagine for a spring flower; every body should have a plant of it, and then increase it to a score at least. The nearest plant that I can compare it to from memory is thus: suppose the little flat-growing *Daphne Cneorum* to be changed to a stiff upright-growing plant, and the shoots growing quite close together, and only ten inches high and a foot in diameter; then suppose them to be covered all over the top with pink flowers, like a *Kalmia latifolia*, and you have the outline of *Bryanthus erectus*, but the true name of it is *Menziesia erecta*.* A beautiful specimen of it was exhibited before the Horticultural Society the other day from our own garden, where it flowered in a cold frame, but I believe it would bloom just as well on the top of Ben Nevis, once thought to be the highest point in Scotland. We had a nice lecture about it, in which it was stated that its origin is a point of dispute; some people saying that it came from North America, others asserting that it is a cross seedling, but we did not hear the opinion of the lecturer; if it is really a hybrid, the mother must be the original species found in Siberia by Gmelin, a German, who took nearly ten years exploring the botany of the north-east of Asia; he called it *Bryanthus repens serpillifolia flore-roseo*, Thunberg mistook it for a heath, and Linnæus called it *Andromeda;* but Pursh and Swartz met with it on the west coast of North America, and made it out to be just what it is, a *Menziesia;* and I have made all this palaver about it in order to get it out into the world, as well for growing in pots to come into the conservatory in bloom with the spring azaleas, as an excellent subject to try experiments in crossing. If I had leisure, it is the very first plant I would take in hand for crossing; and if I had been thirty years younger, I think I could stock a garden from it with plants as different in habit and flower as the Cape Heaths, and fully as rich and gay, besides being quite hardy to the bargain.

It never rains but it pours. My next plant is quite new, also a Heathwort, and is as much superior to *Bryanthus erectus*, in every point of view, as that fine species, if it must be so called, is to the common *Menziesia*, or Irish Heath. There was only a little morsel of it on the same table with *Bryanthus*, but you could not enter the room without noticing it, and without being puzzled to know what it could be till you got up close to it, and saw that it was not only *a new Azalea*, but a new colour, and a new form of flower altogether different from any other azalea you ever saw. If I saw it first through a window, in a stall in Covent Garden Market, I should take it to be a brilliant "self" polyanthus—a rich purple, stuck on the top of a sprig of box-tree, to attract attention. Fortunately, Mr. Fortune, who found it in China, was in the room, and he told me all about it; besides, we had a good lecture on it; but the lecturer, like me, is not much of a florist, so he did not enlarge on its merits as a florists' flower, which it certainly is, as round as a tea-cup, and as smooth on the edges. There are more petals in that flower than one would take to be; but they overlap each other so nicely, that you would think a florist had put them in their places that very morning with a pair of pincers, or whatever they dress their flowers with. It is this confounded dressing which makes so many persons disgusted with florists' flowers. They are really very pretty things, if they did but let them have their natural way. Then, if one florist finds out a better way of dressing a flower than his next-door neighbour, he gets a prize for it, and they both "*jaw*" at each other, and at every one who comes near them, till nobody takes heed of what they say. But here is a new azalea, which needs no aid from the dresser of flowers. Mr. Fortune thinks it will be quite hardy with us; he never saw anything like it in China belonging to that family, and on that account he named it himself *Azalea amœna*, that is to say, "the lovely azalea;" it is evergreen, and the diminutive of the race or section to which *variegata* belongs. If it turns out to be hardy it will improve the whole family of Chinese azaleas as much as the Scarlet Tree Rhododendron, from the Himalayah mountains, has done that part of the family; for, strange to say, the rhododendron and the azalea are only well-defined sections of the same genus, each of which will cross with the other; and such plants and flowers of Chinese azaleas as we now see exhibited at the shows from the greenhouse will be seen in the open shrubbery, or in the "American grounds," all over the country; and if that is not good news, and something new to look for, it is not worth while sending to China for any more plants.

The cultivation and management of these Chinese azaleas has been brought so nearly to perfection, that one would hardly expect to see or hear of any new improvement being effected among them; but I confess that I was completely taken by surprise the other day at seeing the success of a new experiment in the way of

* *Menziesia* is in The Cottage Gardener's Dictionary. *M. erecta* very much resembles *M. empetriformis* there described. In Paxton's Dictionary it is *Erica bryantha*.

propagating them, and that, too, by a worthy friend of mine, the most successful grower of them, and of other plants in England. Mr. Green, gardener to Sir Edward Antrobus, who has taken the leading prizes for these azaleas for many years, sent a half-standard plant of *Azalea Iveryana* to the rooms in Regent-street for exhibition, which, one would think, judging from the size of it, must have taken him at least seven years to grow; *it was only two years old*, and hardly that, and there it was "as large as life," or, at any rate, as large as a good-sized gooseberry-bush, and, as a half-standard besides, the bottom of the stem was as thick as a genteel walking-stick; at eighteen inches from the pot, it spread out into several good-sized branches, and they again divided, so as to make a regular head a yard or more in diameter, and this large head was loaded with flowers; it was the best hit in gardening that I have seen for years. But how was the thing accomplished? I dare say many of the members who admired the plant on the spot had no more idea of how the thing was done, than I have of how the Emperor of China curls his whiskers, or whether he has any whiskers at all. It may be set down as a curious coincidence, that on the same day, and at the same meeting, an entire new form in the flowers of Chinese azaleas, and an equally novel mode of getting up plants of them at a short notice, should appear simultaneously; but so it was. Now, without any breach of confidence, I could tell here how Mr. Green managed his plant; but on a point of honour I must not do so. Mr. Green sent a notice to the Society along with the plant, saying that he would write a paper on the subject for our *Journal*, and, goodness knows, our Journal wants more brains and spirit, but, as we receive it gratis, we put up with it.

I am delighted with our meetings in Regent-street; one sees there everything in our way as it comes out, from a glass wall to a real Heartsease growing in a pot. A few years back, the country was up in arms because we offered prizes for roses in pots; but no sooner said than done, and that to perfection, almost at the first start; and this spring, Mr. Turner, the great nurseryman at Slough, sent us a whole lot of *Pansies in pots*. They were beautifully grown, and as full of bloom as they ever can be in the open ground. By-and-by, all the great respectable florists will find out that the only way to regain the confidence of the public to their trade is to grow and exhibit specimens of all their skill in pots. Then, good-bye to the "tricks on travellers," to pincers, smoothing irons, and wranglings on the part of the small fiddle-stick florists, who have kept us in hot water ever since our beards began to sprout through the skin; then, and not till then, shall Charley and I join the host. Poor Charley! instead of "go-carts" and exhibitions, he had to bend under the hod, with all its accompanying drudgery, the whole of this spring; but, after all, we never lost sight of our great aim at getting in among respectable florists some day or other; meantime, I return many thanks to all those kind friends who have sent me curious and rare plants, and to *S. P., Rushmere*, for his offer to send me the beautiful *Œnothera speciosa*. It is on my list of promised plants, however, from another source. I think the other *Œnothera* he mentions as having lost, is *Cæspitosa*, but it is lighter than he says; but it is the nearest in habit to *speciosa* of all that I know of them, and it propagates from morsels of the roots just like *speciosa*, and it is more tender in winter, and very apt to be lost in wet ground. I have not seen it since I left Herefordshire, sixteen years ago, and I too want it very much, and would try to cross it with *speciosa*. D. Beaton.

GREENHOUSE BUILDING AND HEATING.

"What is worth doing at all, is worth doing well," is an adage that holds peculiarly true in many of our gardening operations. Those who have any intention of investing capital in bricks and mortar cannot set too quickly to work. The mortar will set more firmly now than in the very heat of summer, and there will be no danger of damped plants and tattered walls which generally reward those who procrastinate until the lengthening nights of October.

We have chosen this place for meeting the wants of a few of numerous enquirers, that could not have been sufficiently attended to in the correspondents' column. And, first, as respects a greenhouse about to be erected, the following are the chief details; the mentioning of which will enable our inexperienced readers at once to follow us, more especially if they give themselves the trouble to mark the principal lines on paper—a plan we find it very useful to adopt, when no plan accompanies description.

The greenhouse is to be placed in the angle of a building, open to the south and west; the walls now on the north and east being 19 feet high, it must not be nearer the east wall than 3 feet, and not farther from it than 20 feet. Among the plans suggested, preference has been given to a span-roofed house, running north and south; and, considering the situation mentioned, in this we agree. The house is to be 16 feet wide, and 20 long, inside measure; height to the ridge, 9 feet 6 inches; height of side walls, 6 feet. The south end, in the middle of which is the entrance, is to be all glass above three feet from the ground; the north end and the two side walls are to have no glass. Opposite the door-way is the centre stage of the house, with a centre shelf 18 inches wide and 3 feet 9 inches high; and there are other two shelves on the east and west sides, of 12 and 9 inch width respectively, the lowest shelf being 2 feet in height. There is a pathway of 3 feet in width all round this central stage, the base width of the stage being 5 feet. Then, between these paths and the boundary walls, that is, on the north side, the east and west sides, and the south side, unless where cut in two by a width of 4 feet for door and entrance, there is another stage, the base width of which is 2 feet 6 inches, divided also into three shelves, the highest next the wall being 3 feet from the ground-floor, and 15 inches wide; the second 9 inches wide; and the lowest 6 inches wide, and 1 foot 9 inches from the floor. Three of the sashes of the roof are fixed, and two are moveable. I perceive there are also openings in the wall near the ground; an admirable plan for insuring circulation of air. It is proposed to use Hartley's patent glass for the roof, and window glass for the south end and glass part of door-way; to have vines over the pathways, and to heat all by a single line of 4-inch pipe, going right round the house 12 inches above the floor, and 6 inches from the wall, from a boiler, and sunk at the door-way. Now upon each and all of these matters opinion is asked.

First, then, as to *glass*. We will neither praise nor dispraise Hartley's patent for the roof, as we have not had sufficient experience with it; and we have friends, some of whom are loud in commending it, and others who give it but faint praise. I should not hesitate a moment in using it for a plant-house; if I have a doubt at all, it would be as respects forcing vines and other things. A great portion of light will be thrown on the vines over the paths, not merely from the roof, but the south end; but you may expect those on the west side to thrive the best. Indeed, did vines constitute a chief matter in detail, I should have advised the house to stand east and west, with entrance at either east or west end, and then vines might have monopolised the rafters on the south side, while other creepers might have had

the north side. Matters would have been different but for your high east wall. With the house east and west, growing plants could be kept on the stage on the south side, and blooming ones, where continuance of bloom was desirable, on the north side. In the contemplated arrangement, the house standing north and south, plants to be kept long in bloom will require to stand upon the east shady side.

2nd. Is the *inclination of the roof* sufficient? Perfectly so; but I would prefer the ridge a foot higher, and then, in dull or frosty weather, there will be less likelihood of drip falling on the plants, for a flat roof in winter, in frosty weather, is little better than a shower-bath.

3rd. But would not the *stage* then require to be raised, as, even now, it is 5ft. 9in. from the glass? Just according to the size of the plants you wish to grow. But supposing you wished nice bushy-headed plants, why, even with your present height, I would raise it eighteen inches higher, and so much more in proportion, that your plants might be nearer the sloping-roof. Nay, with your proposed plan of having opaque walls, in the shape of nine-inch hollow bricks, for the *sides* of your house, I would make a complete change in your stage-work. Why have a stage at all of three shelves at the sides? I should not so much mind at the north end; it might keep a few things in bloom. With your opaque walls, the light these side stages would receive would be chiefly from the south end; what came from the roof would be feeble indeed before it got to the lowest shelf, 1ft. 9in. from the ground, and those highest would be in the same predicament, except those sufficiently near the south end, where the light would exert a sufficient force. The rest, farther back on these side stages, would be drawn and spindly, and always pointing their heads one way. We would, even upon the present arrangement, prefer a platform to a stage, as giving the plants more justice, and entailing far less trouble and expense in the construction. But we would prefer no stage or shelf whatever on the side; we would have a border, one foot in width, next the walls all round, except, perhaps, on the south end, where there might be a small platform. In this border we would plant *climbers, geraniums, acacia armata, camellias, oranges,* &c., to cover the wall; and with three-feet-wide paths close to the border, we should thus be enabled to add three feet to the width of the central stage, which might be appropriated to an additional shelf on each side, or widening the two on each side and the central one already there. I advise this strongly under present premises. But if you would make your contemplated brick eastern and western walls into glass, at the height of three feet from the ground—and I presume it will cost no great deal more than brick, and always look much lighter and neater—then I would follow out your contemplated arrangements, only I would have a broad shelf or platform at the sides instead of a stage; that shelf being about 2ft. 6in. from the ground, and the lower shelf of the central stage six inches higher, unless very tall plants were desirable. If I made an alteration, it would be to reduce your side platform from 2ft. 6in. to 2ft., and thus one foot could be added to the central stage.

4th. *Heating.*—The one four-inch pipe round the house will be sufficient with your present opaque walls. It would hardly be sufficient without using shutters in very severe weather, if you had glass at the sides. In sinking at the doors, you must use an open air-pipe there, or the air will accumulate and stop the circulation. With glass on the sides you would require two four-inch pipes to keep a good heat when desirable, though two three-inch will be safe. Under your present plan, one pipe will be sufficient, with a foot or fifteen-inch border. As proposed, the pipe may go there as indicated, and you might have a shelf of that width above it for setting fancy plants in bloom upon. Without side glass, and your stage widened thus from two to three feet, the one pipe might go round just inside the base line of the stage, and thus sinking at the doorways would be avoided. With one or two bends in the pipe, the boiler may be placed low enough to enable the pipe to pass beneath the floor at the north-west corner, then it should slightly rise to the extreme end, and thence fall again to the boiler. At the highest point of the pipe, a tin or iron tube should be inserted, four or five feet in length, and may be fastened with its open end turned downwards any where, as upon the stage. This will prevent air being compressed between two bodies of water, and the circulation will be rapid, and the heating effectual, while the expense and trouble of sinking at the doors will be avoided. These remarks will be found to apply to several enquirers, though chiefly applicable to one.

Pits.—The plan given at page 56 of vol. iv., in which a cylinder of sheet-iron forms the stove, which has copper pipes passing through its sides, and these joined to lead pipes which pass to, and return from a tank, will, we have no doubt, answer well, if properly managed. The great thing is to regulate draught, so as to have as much heat as possible, and no bad air. For any large work, such as a number of lights to heat instead of a few, we would prefer a double cylinder on the same principle, with water between them, and pipes fixed in the usual way. I can only answer a few questions at present.

1. Coke may be burned as well as charcoal, but it will be troublesome from the clinkers it forms.

2. You may cover the whole of the pit with tan, leaving the pipe standing up from the tank uncovered.

3. The box within the pipes would not retain the heat so long as the bed filled with tan right across.

4. You might dispense with all fermenting material, provided your pipes were large enough to give out sufficient heat, by forming a chamber over the tank and pipes, and then covering with rough material, and ashes or sand; but what would be better is sweet tan, as its decomposition would assist the cuttings. But I fear your lead pipes would hardly be sufficient for this.

5. There must always be enough of water in the tank to supply the connecting pipes. R. Fish.

VARIOUS STOVE PLANTS GROWN AS SPECIMENS.

The Achimenes have been lately treated upon, and directions given how to grow them as large specimens. There are several other stove plants that are worthy of being so grown. We are certain that a collection of a few large fine plants have a much better effect than a large number of small plants crowded together, or even at moderate distances from each other. A great number of our readers have, no doubt, had opportunities now and then of visiting some one or other of the metropolitan exhibitions, and must have been surprised at the magnitude and splendour of the specimens of stove plants exhibited. Now, there is no reason why they should not at least try to grow such fine plants in their own stoves. We can assure them, from personal experience, that a considerable number of the plants exhibited are, with few exceptions, grown under many difficulties, such as want of space, want of assistance, and other means necessary to produce them. The man of perseverance, industry, and the diligent application of various expedients, accomplishes the desired end in spite of extreme disadvantages. We know that most of the successful exhibitors purchase new plants out of their own pockets, cultivate them in their leisure time, that is, before and after the regular work-hours, and with a very slight addition to the regular cost of materials.

The result of this extra labour and attention is the production of such fine specimens as we see on the exhibition tables. Such being the case, we feel that a few slight hints on the ways and means of doing so likewise, will be useful to such of our readers as may be desirous to excel in stove plant culture.

Gesneras.—Supposing the cultivator has a small plant or bulb of such plants as *G. Cooperii*, *G. faucialis*, or *G. Merkii*, early in the spring, this bulb should have all the old soil shaken from it, the dead roots all cut off, and then be repotted in the light rich compost described some time ago in The Cottage Gardener. It should be placed in a gentle heat, and kept just moist enough to excite growth. If only one shoot is produced, it should be stopped when an inch or two in height, leaving a pair of leaves only on it. At the base of these two leaves there are buds, and these buds will soon break and produce two more shoots when these have grown two leaves each; then repot the plant into a pot two sizes larger, and tie out the two shoots a little distance from each other. Nurse the plant carefully with water, but do not deluge it, and place it as near the glass as may be safe from cold. When a third pair of leaves are produced, nip out again the buds at the top of the two shoots, and allow two more shoots to each to grow, till each has two more leaves upon it; then, repot again into a pot two sizes larger; this will be a sufficient shift for the first season, and the plant so grown will produce four spikes of fine bloom. If the bulbs are larger, they may probably send forth four or five shoots; then repot, tie them out, nip off the tops, and by that means double the number of flower spikes. The great point is to keep the plants from flowering by inducing free growth, fine foliage, and numerous shoots, before the flower spikes are allowed to appear. The larger the bulbs (and they will become larger every year), the greater the strength and number of the flower-shoots will be produced. Hence, if there is no hurry for bloom, it will be desirable to prevent them flowering at all till the bulbs are sufficiently strong to produce a fair number of flowering shoots.

Gloxinias.—To produce specimens of these fine plants, something like the same process must be followed as that described above for their kindred, the Gesneras. In one particular point a difference should be observed; that is, syringing. Perhaps there are no plants that ought to have their leaves kept more moist than Gloxinias. We have syringed them three or four times a day with the greatest success and most perfect safety. The leaves prevent too much water penetrating to the roots, or this excessive watering with the syringe would be injurious instead of beneficial. In Gloxinia culture, when the bulbs are tolerably large, the number of shoots sent up are in greater quantity than in the case or example above mentioned of the gesneras. Hence it is necessary to thin them with an unsparing hand; the strongest plant should not have more than five or six of these shoots left on it to bear flowers; those left should be tied out almost horizontally, leaving out one or two in the centre to fill up the vacancy. When the plants are in flower the syringing must of necessity be discontinued, or else it will injure the bloom.

Sinningia guttata.—This, when well grown, is a truly beautiful object. It has bright green leaves, and flowers of the purest white, spotted with crimson or red, hence its second name, which means spotted. Treat this fine old fellow kindly, and in a similar manner to the Gesneras and Gloxinias, and he will repay you well.

T. Appleby.

FLORISTS' FLOWERS.

J. S. B.—The *Cineraria* is not worth keeping; petals scattered, notched, and common in colour. The *Fancy Geranium* good. Upper petals maroon, edged with white; lower petals white, with maroon edge. Of course we can say nothing of the plant's habit, as we merely saw a single truss.

CULTURE OF ROSES IN POTS FOR EXHIBITION.

(*Continued from page* 87.)

Training.—Though a rose-bush may appear, when seen growing in the border, an unmanageable thing to bring into a pleasing form, yet, in pots, it is more under control, and may in a great measure be so managed as to give it a well-balanced shape. There are two or three modes by which this may be effected, each mode depending upon the habit of the different varieties. These modes may be described as the bush, the pyramidal, and the twining methods.

The Bush.—This mode of training is applicable to such varieties as are naturally low growers, with short, rather stiff, shoots. Some of the perpetuals, hybrid-perpetuals, moss, and China's, look well trained as a low bush. To keep them in this form, and at the same time to prevent the branches from crowding each other, it is necessary to thin out as they grow all weak and very strong shoots. The weak ones would very likely not flower, and the over-strong shoots would rob the rest of that strength necessary to bring forth fine blooms. When these are removed, place short sticks, painted a light green, to each of those left on the bush. Arrange them so as to give them a neat appearance, and leave them so thin as to give room for the heads of flowers to expand, yet, so thick as when they are in bloom each bush should be well furnished with flowering shoots. This requires forethought to be exercised at the commencement of the operation of training. The sticks are a necessary evil; but when the shoots have advanced so far as the appearance of the buds, they will become set, as it were, in the desired position, and then the supports may be removed, or they may remain till the day of exhibition, to steady the blooms during the transit from the house to the exhibition tent.

The Pyramidal.—By far the greater number of roses should be trained by this method. No plant, grown in a pot, has such an imposing, almost regal appearance, as a rose-tree trained as a pyramid, and covered with its large richly-coloured, deliciously-perfumed blossoms, and bright shining green foliage. The method to be followed in order to produce a handsome pyramidal rose-tree in a pot, is simple, and consequently easy. Place a stoutish stick close to the central stem; if there is not one already, the strongest, as near the centre as possible, should be tied to the stake, and the rest brought down to an horizontal position. This may be done either with very short sticks placed round the pot at regular intervals, or each side-shoot may be hooked down with hooked sticks, or, what is better, a wire fastened round the pot just under the rim, so tight that it will not slip over the pot edge. The lowest shoots as they grow should be gently tied with twisted small pieces of garden-mat to this wire, then the next tier of branches should be brought down and tied to the lowest tier, and so on, till every tier of branches are tied, so as to form the pyramid, the centre shoot forming the summit. The shoots all round the centre should be as much as possible equidistant, so that all sides are furnished alike. It may be necessary, when some of the varieties may produce strong, over-bearing shoots in any particular part of the plant, under this mode of discipline, to remove such, and also weak, puny shoots. Both these kinds of shoots are useless, and injurious to the general well-doing of the flower-bearing branches. The leading shoot should have the extreme end shortened in, to cause side-shoots to be produced,

more especially in the perpetuals and autumn-blowing varieties.

Twining.—This mode of training applies only to such as are of a climbing habit. Several of the hybrid-China, noisettes, Banksians, and all designated as climbing-roses, should be trained by this method. Many of them are handsome objects in pots, but as they produce their blooms on the spurs of the long shoots, they will not bloom if these are pruned away, hence it is necessary to twine them. The way to accomplish this, is to place four or five stakes at equal distances within an inch or two of the edge of the pot. These stakes should be at least three feet high, made of good red deal, and neatly painted green. The plants should be furnished with at least three, and not more than five long strong shoots. These branches should be brought outside the stakes, and twined gently round the circumference of the stakes, tied to each, sloping gradually upwards, and at equal distances from each other. They ought to cover the stakes nearly from bottom to top; the extreme ends should be cut off; this would, combined with the twining process, cause almost every eye to break, and each side-shoot would most likely blossom in bunches freely.

Thinning the blooms.—Whenever there are more flowers than there is room for each fully to expand, or where the plants are weak, it is highly necessary in an early stage to thin the buds; take away all that are small, deformed, or imperfect, leaving the largest and most healthy to expand and come to perfection. This is especially needful with such varieties as have very double flowers, or hard close buds—such for instance as Smith's yellow noisette. It is reasonable to expect that any rose will be benefited if a certain number of flowers only are allowed to bloom. Such buds also should be left as are likely to bloom at the same time; this rule of course applies only to plants intended to be exhibited.

T. Appleby.

NOTES ON BROCOLI.

If the long-continued service of any one vegetable be regarded as a criterion of its worth, the one which now forms the subject of our notice has great claims on our attention; as taken with its kindred tribe, the cauliflower, (and botanists class them together), they are expected between them to furnish our tables with an acceptable dish the whole year round. Now, though this is difficult to accomplish in severe winters, or in situations unusually bleak and cold, yet the improved varieties which the skill of cultivators have presented us with in the last few years, have made the undertaking more easy than it used to be, and some have affirmed their ability to accomplish the task with one kind alone. Be this as it may, we are not inclined to curtail our list so much as that, although we are enemies to a multitude of names; but as there is generally (we might say always) some uncertainty hangs over the character of seeds of this tribe, it would be unsafe to trust the whole crop of this important article to the uncertainty of one individual kind. Rather, therefore, make use of some four or five sorts which the experience of former years has taught us may be expected to come into profit at the times wanted, while at the same time a fair proportion of those whose character leads to a belief that they ought to furnish a continuous supply of themselves may also be planted; of the latter class, our readers will perceive that we mean the *Walcheren*, which, forming as it were a connecting link between the cauliflower and brocoli tribe, partakes of the character of both. This useful variety, which some insist may be made to keep up a supply from the first of January to the last of December, is, when true, the most serviceable brocoli that can be planted; yet we have seen many failures with it, and it is not sufficiently hardy to withstand such severe winters as we generally have alternately—we more especially allude to the central parts of England. Along the south coast, and other highly-favoured spots, no doubt but it is all that can be desired; but there are a great many places where it is evidently not at home. Besides, when a severe season does occur, and a total dependance has been put on this one, then woe betide the gardener who has to face the kitchen authorities for so many weeks, when one of the most necessary of winter vegetables is lacking! He will then sorrow that he did not plant a good breadth of the *Sprouting*, *Danish*, or other hardy kinds, on which the war of the elements makes but little impression.

Now, though it is too late at this period to sow the principal crops of these and other brocoli, yet, as we gave directions at the proper time, we expect that a thriving brood are shewing themselves with great promise, and we now proceed to the planting, or rather to make arrangements for that work; as the skilful cultivator is always expected to have that foresight which enables him to see his way clear in his different plans and crops, that he will have planted his other crops so as, if possible, to give this one a plot of ground on which something different from the cabbage-worts occupied last; not that we insist on this point, because we have seen excellent crops of this and other things follow each other for a number of years—still we think it was at a sacrifice. Nature is so accommodating as to direct her resources to the production of that particular food wanted by each individual tribe, but if she be taxed again and again for the self-same thing, we may justly infer her energies will become impaired, and a sickly diminutive growth be the result, unless a generous assistance be given in the shape of manure, either solid or liquid. We are aware that a liberal application of these will maintain that degree of fertility necessary to support the same crop in health and vigour year after year, yet we are far from certain that a less quantity would not support equally heavy crops if varied every season; therefore, when it can be managed, let brocoli follow such a crop as potatoes, or some of the pea tribe. It is very common to follow the former of these the same season, when the roots have been dug early, and as it is necessary to crop heavily in most gardens, a period of rest is out of the question, unless it be that period in which all progress is arrested by the elements, and as early potatoes are generally off in time to plant brocoli, recourse must be had to such a suitable piece of ground.

In addition to this, we plant brocoli between rows of peas, which, on that account, are sown in rows wider apart than usual—generally six or eight feet; and in planting, the usual distance of two feet is allowed between row and row of brocoli, one being just a foot on each side of the peas, so that when the latter is cleared away, the ground is fully occupied, and, excepting the latest peas, there is generally sufficient growing season afterwards to allow the plants to attain that sturdiness of habit which their confined position had deprived them of. Now, we are no advocates for mixed crops, except in some special cases, and this is one; and we have seen excellent crops of peas (five feet high) grown in rows eight feet apart, and when the picking is confided to some careful individual the crop alluded to is progressing likewise. It is almost needless to say, that if planted without the encumbrance of the pea crop the brocoli will be better; but there is seldom so much ground at command as to allow them that indulgence at all times.

In planting, be sure to place a few of the latest kind on some north corner, or other shady late place, in order to prolong the season in spring up to the time of cauliflowers coming in.

As we have, in former numbers, given the kinds most

to be depended on for their general utility, we add no more here than merely saying, that another sowing of the *Cape* and *Walcheren* ought to be put in, and means taken to prevent the fly or other enemies attacking those just coming up, which they are almost sure to do. We need not allude to the destruction of weeds amongst them, because the war of extermination was proclaimed at the first, and peace to such enemies is out of the question.

Sundries.—*Spinach*, *Lettuce*, and *Peas*, may be sown almost weekly; *small salading* oftener. The larger kinds of *Blue Peas* are more in repute now; and of *Lettuce*, if your situation be dry, it is better to sow where they are to remain, as they are liable to run when transplanted. Sow also *Radishes* on some cool north border; the turnip kinds are the best now. *French Beans* may also be put in if wanted, and *Scarlet Runners* planted; but if those planted the beginning of the month look promising, it is early enough yet for a succession, as this crop continues in bearing longer than many others. *Turnips* may also be sown, and those thinned which were sown some time ago. The same to be done with spring *Onions*, only, as we propose an article on thinning, we only allude to it here; a few, however, may be sown to draw young for salads, or other purposes, when wanted. The *silver-skinned*, which were sown the first week of the month for pickling, will not require much thinning, but weeds and other superfluities removed. Plant out, if not done before, the first crop of *Celery*; and prick out on some well-prepared bed a quantity of good stiff little plants to succeed them, after being strengthened in this nursery bed. Attend to *Ridge Cucumbers*, *Vegetable Marrows*, &c., under hand-lights; and when all danger from cold nights is over, plant out any spare *Capsicum* plants on some sunny border that may be left after the frames and other more favoured spots are filled; they will produce abundance of green fruit, which may be of service for pickling, &c. See to *Melons* now progressing, and take means to keep away red spider and other enemies. A cure is much more difficult; shutting up the frame warm after a gentle watering is very useful that way, only it must not be over-done, otherwise an opposite error is run into. *Cucumbers* being more hardy, and requiring water in greater quantities, may be inured to a greater influx of fresh air, and the same allowed to remain on later in the afternoon, before watering and shutting-up. *Sweet herbs* require looking-to now; and beds of *Thyme*, from seedling plants, may also be made. About the first of June is better for cuttings of *Sage*, the young growth is not yet sufficiently firm. Dig and *prepare for cropping* all ground that may become vacant, and hoe, cleanse, and keep in order every part of the grounds, which, with due management, may be done to the edge of the rubbish-heap. *Water* with prudence—and, we may add, caution—only those things which necessity compels you (see a late article); rather shade such seedling crops as, while vegetating, shrink from the all-powerful rays of a hot sun, or, it may be, the withering influence of drying winds. More forward crops may be treated differently; but avoid, if possible, systematic waterings. Nevertheless, if absolutely necessary, do not delay it, as the rapid growth at this season renders corresponding nourishment compatible with a healthy development.

J. Robson.

HONESTY IS THE BEST POLICY.

There is, I am sorry to say, among the humble classes, a very great carelessness and indifference with respect to honesty, which leads sometimes to great crimes and severe punishments; and, in other cases, to doubt and suspicion where actual discovery may not have been possible; but, in all circumstances, shame, disgrace, and misery are brought upon themselves and their families; for who will choose to employ either man or woman of whom it is felt that they are not trustworthy, although nothing can exactly be brought openly against them? It is the bounden duty of parents to look closely after their children in this matter, and not only strictly to check the very least appearance of dishonesty, but to set them a bold and bright example of faithfulness in all things. If a child sees its parent make light of evil, it will do so too; and if it is taught to go out and steal wood, or allowed to bring home a bunch of turnips, greens, or *anything whatsoever*, without inquiry or reproof, it will see no difference between taking what *seems* a trifle and what is considered worth bringing before the bench of magistrates. Children are quicker and sharper than we are ready to suppose; they see and know what is wrong in an instant; and the least want of thought in what their parents or betters say or do, leads to a great deal of mischief, the end of which cannot be foreseen.

Charles Smith lived for some years in the family of a gentleman, who had a kind of regard for him, because he knew all his family, some of whom had worked on the property for many years. When this gentleman settled in a small residence, with a garden, a field or two, and a couple of cows, he took Charles into his service, to live in the house, but to be an out-door servant, and do everything. He was just the sort of man for the place; he could garden, manage a little farm, brew, and turn his hand to everything. He was very good-tempered, quiet, obliging, and active, and loved the children dearly; was never tired of them, and would do anything at any time for all belonging to the family.

In the course of time, his master and mistress had occasion to suspect that there was dishonesty somewhere, and they soon found that Charles was the guilty person. Nothing of any consequence had been taken, but little trifling things disappeared, such as a blacking-brush, an old reaping-hook, odds and ends of useful things lying about, that were not forthcoming when inquired for, but that having no legs and feet could not possibly walk away. The beer, too, went at a great rate; in short, a stir was at last made, and Charles was found out as a petty pilferer. With the kindest intentions, but most unwisely, his master was melted by his grief and entreaties, and did not turn him away. He had married one of his fellow-servants, for whom the family had a great respect and regard; and principally on account of poor Betsey, who suffered more than her husband, and abhorred his crime, so that she never offered to screen or excuse him, Charles was kept in spite of his conduct, but was watched and looked after more closely. Constantly, however, little things were missed; he was scolded and threatened, but still, for his wife's sake, forgiven; and so it went on year after year until his master changed his residence, and no longer needed his services. He then settled in his native village, and took to day labour. He was at first employed regularly by one family, but his pilfering habits continued; things of no value, but still things that were not his own, were missing, and were sometimes found smuggled up in the stable, where they did not need to be; and, therefore, Charles was quietly parted with, and nothing more was said. He was such a quiet, steady man to all appearance, that others took him on, but he somehow left them after a time, although no one ever heard why.

At last he was taken into the employment of a very respectable miller, who settled in the village, and lived with him for some time. Sin will not always go undiscovered. The Eye above sees it, and the Hand above brings it to light. The miller, at various times, missed topping and pollards, and having no reason to suspect any one in particular, he kept a close watch upon all his men.

"Quite accidentally," as *men* say, but in accordance with the will and purpose of *God*, the miller one day found, in a secret place, covered carefully over, a sack of topping. He marked the sack, and left it just as he found it. Under cover of night the man came to remove it; and the miller, who was watching, found that man to be Charles Smith. He suffered him to go quietly off with his booty, and gave him time to get home. Charles was sitting at tea with his wife and children round him, all but himself unsuspicious and happy, when a tap at the door announced a visitor, and the miller, with a constable behind him, entered the cottage. It was a scene of sorrow. Charles never attempted to deny the fact, or resist the constable. He was a quiet, peaceable

man in his character, and gave himself up at once. His horror was at the wretchedness of his poor afflicted wife, and having to leave her and his little children. It is a strange and remarkable thing, that a man who loves his wife and little ones so dearly should dare to be guilty of such a crime. One would think for their sakes, if not on better grounds, a husband and father would forbear to do what must make them all very miserable, and ruin them besides, as well as himself. A man without feeling for others might not be wondered at, but Charles Smith was a tenderly attached husband and father, and never gave his wife one moment's pain, *except* in the matter of dishonesty.

Betsey Smith was left among her poor little children, weeping and miserable. She had long dreaded such an event, but it came at last like a clap of thunder, as afflictions always do. She had many friends, and they all helped her as well as they could; but they could not remove her trial, or make her forget it.

The miller was a very kind-hearted man, and would have been very glad to get poor Smith off when he was fairly committed for trial; but he was strongly advised to let him be punished, as one human means of doing him good. He did so—and six months' hard labour was the result.

Betsey is still alone with her children, supporting them by her needle. Her friends employ her, and do all they can for her; but although submissive and resigned to her trial, her countenance is one of the deepest sadness. She feels it in the right way—as an offence against the Law of God, rather than that of man. "Against Thee, Thee only, have I sinned, and done this evil in Thy sight," should be the confession of every heart; for the offence against man is as nothing compared with that against a holy and just God.

Let the experience of Charles Smith convince us that our sin is sure to find us out; that is to say, the Lord will, sooner or later, bring it to light. He will guide the foot, the hand, the eye, to our most secret haunts, and make that visible to man which we are not ashamed to do before His sight, "who is of purer eyes than to behold iniquity." Let us remember, too, that although there are different kinds and degrees of guilt among man, it is not so with God. In His sight who searcheth the heart, there is no respect of person, or act, or sin; it is nothing *to us* what a man feels, it is only what he does, that our country's law can meddle with. But the Lord looks upon, and "is a discerner of the thoughts and intents of the heart;" and it is the *intent*, and not the deed only, that He abhors. There is no *little* sin. Let us daily and hourly breathe this prayer from the ground of our hearts: "Lord, have mercy upon us, and incline our hearts to keep Thy law."

DRONES APPEARING IN AUTUMN.

The following dialogue occurred to-day with a cottager who keeps a great many bees. It may possibly serve to throw some light upon the *why* or *wherefore*.

"Do you find your bees desert their hives this spring?"—"No."

"It is a feature this season they are prone to do so!" "I can tell you the reason."—"Why?"

"Because they have no honey; they are starved out!"—"No, that is not my case; to the instances which I refer, plenty of honey remains in the hives."

"Well, I can still give you a reason. Whenever *drones* make their appearance at *Michaelmas*, do away with those stocks immediately; they will never come to any more good. By this sign you may depend upon a desertion from the hives in the manner you speak of."

Upwards and Onwards.

(*If drones did exist* last autumn in the deserted hive of "Verax," it would *prove* (in accordance with the reasonable opinion expressed in the above observations) the correctness of my surmise as to the cause of such quasi-desertion (*vide* last number), viz., that the queen died last autumn, though she had sought them to provide for her approaching decease in a manner which, had the time been spring instead of autumn, would have probably saved the stock, but which occurred too late in the year to enable her—granted she was in a condition to be a mother—to supply a new progeny in sufficient numbers to meet the approaching winter. I observed in the case of one of my stocks, which lost its queen early last April, that almost the last eggs which she laid before her death were *drone* eggs; as if she foresaw her end, and, in obedience to a law of nature, provided for the future wants of the hive. One of the first lessons I learnt in bee-keeping was, that it was a very bad sign when drones, in any considerable numbers, were seen in any hive after August—a sign that something was the matter with the queen—either she had met with some accident, or she was approaching the usual period of her decease.—A Country Curate.)

THE BOHEMIAN PHEASANT.

My attention was first called to this curious bird by Mr. John Baily, of 113, Mount Street, Grosvenor Square; and I have the greater pleasure in acknowledging the obligation, because that gentleman, unlike so many of his brethren, makes no mystery of the natural historical facts which continually fall in his way in the course of his trade, but, to his credit, is ever ready to throw light, instead of accumulating doubt and darkness, upon some of the greatest difficulties which the zoologist has to encounter, namely, the obtaining of true *data* whereon to speculate respecting our domestic and our home-bred birds.

To many practised sportsmen, if such are on our list of readers, the name of "Bohemian pheasant" will be new, and the thing itself unknown. Nothing that applies to the Bohemian pheasant is to be found in Buffon, or in Temminck's elaborate and, as far as he could possibly make it, complete *Pigeons et Gallinacées*. All I am able to do is to collect a certain amount of information, leaving its origin and native place quite imperfectly indicated. Bohemia is an extensive country, abounding with a great variety of game, both winged and quadruped, but its just claim to give a name to the bird under notice is not yet established. Should any well-wisher to this series of papers be cognizant of further particulars besides those now mentioned, he will confer a favour by communicating them.

The first time Mr. Baily mentioned to me a kind of pheasant thus called, I was induced to suspect that the term might be merely a cant or trade name, for the purpose of mystification, for some of the well-known varieties, such as the White, or the Pied birds. To this he replied—

"There is, I think, misconception on your part when you consider the Bohemian a trade name for the pheasant so called. I believe it to be a distinct breed; the only birds of the kind that I heard of for many years were at Combe Abbey, the residence of the Earl of Craven, who gave me a pair. I was asked by a gentleman, a customer of mine, in London, two or three years since, to go and see a strange bird which he had stuffed, and which he considered to be a cross between the Silver and the Common pheasant; as soon as I saw it I found it to be a Bohemian. It has the same shape, carriage, size, voice, and plumage as the common bird, but in both cock and hen the plumage has the same colour as if it had been washed over with cream. I believe it to be a distinct bird because it is *never* found in the woods with other birds, and were it a vagary of nature, or the result of interbreeding, it would of course occur in coverts where they are carefully preserved and highly fed. I think any account of pheasants will be incomplete without a notice of this bird, which is the more interesting because it has as yet escaped familiar description. I fancy when you see it, and reflect that there are not perhaps one hundred of them in England, while you will say in beauty it is inferior to the common pheasant, you will admit it is a distinct breed, and consequently entitled to consideration."

It was hoped that the true state of the case might be learned at Knowsley if anywhere. A communication kindly written by the late Earl of Derby, March 27, 1850, states as follows:—

"As to the Bohemians, I do not pretend to decide whether they are a distinct species or not, as I know nothing of their real origin, and never heard of any place where they have been seen in an actually wild state. I can add very little to what Baily has written to you about them. I have known them, and admired them, for many years before I possessed any; and I then certainly considered that they were an accidental variety, though I am now *more inclined* to think

them a true breed, though from whence, or why called Bohemian, I know not. Lord Sefton first obtained for me a cock from Lord Craven (who is a near relative of his) and I put him to some hens of the common kind. They bred readily, and multiplied much, and by degrees have got into our coverts, where they live exactly like the *colchicus*, and are frequently shot in our battues, though in general the sportsmen avoid doing so, when they seem much savouring of the true Bohemian. Baily's description of these birds is very generally correct, though I hardly know that I quite agree with his comparison of them with the *colchicus*. The latter is undoubtedly a more brilliant and gorgeous bird, but there is a modesty and delicacy about the Bohemian's plumage that I cannot consider at all inferior to the other in real beauty. Baily's idea of its being washed in cream, though a very quaint and singular notion, is very truly characteristic of its appearance in the male, and perhaps in a less degree, though I have not noticed it much there, in the hen also. *She is of smaller size than the female colchicus*, and about equal to the hen of *Phasianus versicolor*, which I had, but have lost. The hybrids between Bohemian and common pheasants I think resemble most closely the latter, and, as far as I can learn, freely breed with them either way. I do not know if the hybrids have ever been tried *inter se* alone, but do not place too much faith in Baily's estimate of the number of Bohemians in England. Among some pheasant eggs I had from London last year, *one of these produced a chicken, which our pheasant-tender, Redhead, was much struck with when very young, and which turned out to be a Bohemian.* It was reared, but has since died after arriving at maturity. Subsequent to the cock which Lord Sefton got for me from Lord Craven, my brother-in-law, Col. Hornby, got me, *I think* from Sir Frederick Bathurst, either a hen or a hatch of eggs, and they have bred a good many with us here since. I wish we could learn something more decisive about them, as I quite agree with Baily, that your book will be incomplete without some account of this kind. Their origin is the great point."

On this Mr. B. observes,—

"Touching Bohemian pheasants, I am glad Lord Derby, who in birds is a host, agrees with me in most points; and I am quite prepared to admit I am wrong as to the number of them in England, having, since I wrote to you, heard from Mr. Fawkes, of Yorkshire, that there are many in his neighbourhood. But it must be understood, that when a dozen are found in a covert it is thought much of. I cannot learn anything of their origin, but have little doubt of the 'hybrids' [between them and common pheasants] breeding one with another, and I would only admit the use of the word in a qualified sense. [Mr. B. would include invariable sterility in his definition of a "hybrid," though it is usually employed to signify merely any half-bred or intermediate progeny between distinct races, leaving the question of fertility or infertility open to experiment.] My notion of a 'hybrid' is a bird produced between two of different tribes, as Wild duck and Pintail, or Canada and Bernicle geese, both of which I have seen. But the bird between the common and Bohemian pheasant I view in the same light as a cross between the Labrador and Aylesbury duck: shape, habit, and genus are alike, and it makes a 'cross;' but as no rule of nature is violated, I do not think it a 'hybrid.' Some years since, I had a Bohemian cock, and put him to a common hen, and bred from his produce till I got an apparently pure hen. This bird I put to another pure cock given me by Lord Craven, and bred very fine birds."

That this fact, however, is no proof of specific identity is demonstrated by the famous *versicolor* experiment. Sir W. Jardine's opinion shows how cautiously any conclusion ought here to be decided upon.

"The common pheasant breeds also freely with the ringed bird, and the offspring is productive. This has been considered by many as a proof that these two birds were identical; *but in the whole of this order, and its correspondent one among quadrupeds, this law has a much more extended modification*, and can scarcely be taken as a criterion, except in very opposite instances."—*Naturalist's Library; Gallinaceous Birds*, page 198.

For the rest, I have only the result of my gleanings to offer. The same writer says:—

"There is another very beautiful variety which of late years has become extremely common in Scotland, and has received the appellation of Bohemian pheasant. The ground shade of the plumage *becomes* (?) of a rich green cream colour, but the head retains its glossy tint, and the black tips and markings on the breast, and belly, and back, appear even more conspicuous than in the ordinary state. This state may occur from a modification of the same causes which influence the change in the white varieties."—*Naturalist's Library; Gallinaceous Birds*, page 198.

Mr. Yarrell's idea is similar:—

"This account of our pheasant having extended to an unusual length, the Ring-necked and Bohemian pheasants will, for brevity's sake, be considered as only varieties. The two or three examples which I have seen of what are called the Bohemian pheasant, shot in this country, have appeared to be accidental varieties, very pale in colour on the neck, and approaching to buffy white on the chest, back, and wings, apparently from weakness, and consequent defective secretion."—*Yarrell's Birds*, vol. ii., page 288. (1843.)

Another account, from a very useful book, is not more decided:—

"*Bohemian pheasant.* This name is employed in many parts of England to distinguish a species or variety of the pheasant which is met with in several preserves, but which does not appear to have received the notice of ornithologists. The head and neck are coloured much the same as *P. colchicus*, but all the rest of the plumage is of a pale brownish yellow, the feathers being edged with black, and indented at the tips, as in the species last described (Ring-necked); tail rather darker than the body, but paler than in the common pheasant. The history of this peculiar breed, together with the origin of its name, does not appear to be well ascertained."—*Jenyns's Manual of British Vertebrate Animals*, page 167.

My own Bohemian cock pheasant, in beautiful plumage, and awaiting the arrival of a hen or two, escaped from his place of confinement during the (Norfolk) snow-storm of November, 1851. He was last heard of in the woods at Dunston, but has probably been picked up ere now by some unauthorized curiosity-hunter, and, having performed by railway a journey of indefinite length, may stand staring in a smart glass-case, the pride of his possessor. To Bohemian pheasants, with me, is attached the word Finis.—D.

TO CORRESPONDENTS.

Flower-basket-bed (*Muffin*).—Yes, the "high-coloured" nasturtium, or rather the dark one, will do to trail over the sides of a basket-bed filled with yellow calceolarias; plant or sow them just inside the rim, and at the first going off keep them well trained to the shape of the bed. A bed of *Verbena venosa*, and *Variegated Scarlet Geranium*, should be planted in regular rows, nine or ten inches apart, and the two alternating in the rows. It is not possible to adjust the soil so as to get the two to come up of the same size all the season; the verbena generally taking the lead, and the beauty depending on a right balance of the shades. The verbena must be often pruned in. The bulbs you sent are *Scilla non-scripta*, White Harebell; and *Muscari racemosum*, Starch-scented Hyacinth.

Filled-up Pond (*F. W. S.*).—You have filled a large pond with sand, "for want of better materials," and the surface to the depth of six inches, is covered with garden soil, and you ask how the space can be turned to the best account. If the pond stands in the dressed ground, all the bedding plants and annuals will grow there, and some of them, as the strongest geraniums, tagetes, &c., &c., will do better there than if the whole was good soil. If in the kitchen-garden, all the spindle-rooted crops will do on it. A famous place for radishes, Early Horn carrot, skirrets, &c.

Egg-eating Fowls (*G. H. Smith*).—The correspondent who complained of his fowls eating their eggs, *had* previously supplied them with an abundant quantity of those articles so well known to all persons who feed poultry, as necessary to their nourishment, digestion, and productiveness; and he had also tried the often-mentioned experiment of offering them a hot egg. I know no reason why a fowl should not be cured of a bad habit—provided it is a habit, not a necessity—in the same manner as a four-footed domestic animal. Those who have been at the trouble and expense of raising fowls which they could not procure in the market under from one to three guineas each, are naturally anxious to try every expedient before consigning them to the cook. As the Editor justly remarks, there is very little phosphate of lime in egg-shells. When fowls break their eggs *for the sake of the shell*, I have found they generally do so for want of hard substances to assist digestion; but this was not the case with the correspondent's fowls, as they liked to eat the egg, but left the shell.—Anster Bonn.

Bulb-beds (*H.*).—Your beds of tulips, hyacinths, and anemones, may be planted with the *Salpiglossis* at once, but as marigolds, China asters, and zinnias, can be safely transplanted when more than half-grown, we would prefer keeping them in the vegetable part of the ground until the bulbs are ripe, when the beds could get a good digging all over. The

Polyanthuses and *Auriculas* must be removed, and you may safely do so now; they will not answer with any other crop. Almost all annuals will transplant once or twice, and be not the worse. Why not try *Tagetes tenuifolia, Saponaria calabrica, Sanvitalia procumbens,* and *Lobelia ramosa*? If sown now, all of them would be in good time after the bulbs, and keep in blossom till the end of the summer, and through the autumn.

Payne's Bee-glasses (*M. J. L.*).—These bee-glasses are sold by Messrs. Neighbour and Son, and by their agent, Mr. Wm. Drury, Castle-street Liverpool. See advertisement in The Cottage Gardener. The prices is 1s. 6d. or 1s. 9d. per lb., making each glass about 2s. 6d.

Bees in a House, &c. (*Clericus*).—"Having adopted 'Country Curate's' method of bee-keeping, will he be so good as to inform a fellow-curate whether he advises the old hive (being removed after swarming) to be placed on the apiary, *unstopped immediately*, since, in the 'English Bee-keeper,' he recommends that the parent hive *be stopped up for three days*. Does the distance from the original position, or the *direction* in which the hive fronts, signify, *i. e.* (for my apiary has faces south and east), would the removal of a stock to the *east* side interfere with the success of the operation? What are the disadvantages, if any, of placing hives near together in a house?" "Your correspondent, '*Clericus*,' has not very clearly stated, whether he is going to adopt my *cottager* system of bee-management, or that which I recommend to the *experienced amateur*. If the *former*, he will find, on turning to page 38, of the 'English Bee-keeper,' that, on removing the old hive, and substituting the swarm in its place, I recommend the parent stock to be closed up, only at most for a *few hours*. It is only where a swarm is artificially *forced* to issue by *driving*, that it is advisable to close it till *the third morning*. In the former case it is not necessary to close up the old hive at all, because, as the swarm issues naturally, the bees are prepared to lose their old queen, which is not the case in the other instance. The closing up of the old hive, however, is sometimes useful, as tending to retain more bees in it than if they had been permitted free egress all day. I have not found any particular distance from the original position more favourable than another. I have had both swarm and parent stock within a few feet, and at a considerable distance from each other; but, without the precaution of stopping up the old hive for a few hours, I do not think they ought to approximate nearer than three or four feet. It matters not at all what direction or aspect the hives front, though undoubtedly a south aspect is the most advantageous in general. With respect to *hives in bee-houses*, I am of opinion that they ought not to be nearer than two-and-a-half or *three* feet to each other, except where they are kept well distinct from each other, by partitions at the sides, projecting some five or six inches within and beyond the bee-house front. Otherwise frequent confusions would be likely to occur; and yet I have seen ten or a dozen hives ranged side by side, touching one another, very commonly in every part of Switzerland. I have found a difficulty in conducting my apiary on the artificial system in bee-houses, so as to avoid fraternization, or something worse between the bees of a stock, removed for a time to be operated on, and one of its next neighbour hives. Old apiarians, too, tell us of the awkwardness of too near proximity in swarming time, when the confusion occasioned by the issue of one swarm will sometimes spread to the adjoining stocks.—A Country Curate."

Losses in Hatching (*N. P.*).—Your complaint of losing so many chickens in hatching I find to be very general this spring, and is *no doubt* the effect of the continued dry weather. I have set most of my hens in shallow baskets, on a damp floor, and have been more lucky than my neighbours. Many good judges recommend dipping the eggs into warm water, but I do not like to touch them at all; I, however, occasionally remove the baskets and wet the ground beneath. I have helped more chickens from the shell this spring than ever before, and with good success; only, if you do so, be very careful that the assistance does not come too soon.—Anster Bonn.

Shanghai and Cochin China Fowls (*M. M.*).—For a description of Shanghai and Cochin China fowls refer to The Cottage Gardener for July 31st, and August 28th, 1851. The chickens may be treated alike, *i.e.* with varied and abundant feeding. It is difficult to judge from description of the complaint from which your bantams are suffering; the comb turning dark would seem as if it had been touched by frost. Warm housing, generous and varied feeding, and shelter from cold, would, no doubt, prove beneficial. Have they, in their present confinement, an ample supply of gravel and lime?—Anster Bonn.

Boiling Water in a Wooden Vessel (*Verax*).—It is easily effected by having a coil of strong iron pipe within the vessel at the bottom, and that pipe connected with the top and bottom of an iron boiler that will bear a very high pressure. Water heated in the boiler to about 250°, and with that and the pipe duly proportioned to the quantity of water to be heated, would probably effect your purpose; but this is a question that a civil engineer will answer better than we can. Your question about *Verbena venosa* was answered in our last number. Your exhausted *Tan-bed*, turned and moistened, will retain its heat for three or four months.

Pit Heated from Kitchen-Fire (*A Moor Edger*).—The boiler, placed properly by your kitchen-fire will answer your purpose. Have 3-inch pipe for the bottom-heat, and 2-inch pipe for the atmospheric or top-heat. The circulation of the water in the latter pipe will go on provided its flow-mouth is near the top of the boiler, and the return-mouth near the bottom. The *size* of the boiler is of no consequence; the only care required is that enough of surface be exposed to the fire to supply heat as fast as it is given out by the pipes. If you have two square feet exposed to the fire you will have sufficient. The pipes passing across the path must be well secured against cold.

Mammoth Gourd (*An Amateur*).—The plants should be treated just the same as cucumber plants. As they are in a frame they had better be potted singly into 6-inch pots, plunged in the soil of the bed, and kept there until the end of the month; then, hardened off, they may be planted out on a warm border under a hand-light.

Dutch Every-day Layers.—If *S. A. S.* will send us a stamped blank envelope, containing her address, we will forward it to a gentleman who can afford a supply.

Bees (*D. B. S.*).—Buy Payne's *Bee Keeper's Guide;* you can obtain it through any bookseller.

Hollow Walls (*M. A. Leigh*).—These are walls with a hollow space between the two outer tiers of bricks. Any bricklayer will tell you how they are built. *Felt* is a woollen material, and would not do for the sides of pits. A pit against a south wall would do very well for the autumn shelter of camellias, carnations, geraniums, &c. The frost killed your potted verbenas.

My Flowers (*W. W. P. P.*).—The papers you mention will probably appear in a separate form.

Cochin China Fowls (*Doncaster*).—We know where they are kept in a flower-garden in a space about thirty feet long and twelve feet wide, enclosed by galvanized iron net-work three feet high. They never attempt even to get over.

Blue Bedder (*Ibid*).—*Lupinus Hartwegii* or *Salvia patens* for a large bed; *Salvia chamædrioides* for a small one.

Fumigation.—We are much obliged by the following:—"I beg to inform you that I have tried tobacco and cayenne pepper as fumigators, following Mr. Ayres' directions in every point, with the exception of the nitre paper. I am sorry to state it proved far from being successful—in fact, it did not destroy half the aphides that infested the plants. The house in which I tried the experiment is 48 feet long, 16 feet wide, 16 feet high at the back, and 8 feet high in the front. The house is closely glazed, and the experiment was tried on a very calm evening. I used eight ounces of tobacco, and one ounce-and-a-half of cayenne. Why did I not obtain the same result as Mr. Ayres?"—C. Langley, *Langford*. (Did you use the Chili or capsicum pods, or some compound from the grocers?)

Pit Heated by Pipes (*An Anxious Beginner*).—See what has been said to-day, by Mr. Fish.

Greenhouse Building (*A Subscriber*).—The plan has come to hand, and has been referred to by Mr. Fish to-day.

Rhodendrons Forced to Flower in Winter (*G. Bancroft*).—It matters very little whether you plant them out, or keep them in their pots, if you intend them for early blooming again, but if kept in the pots, they should be plunged, top-dressed with good soil, and a little old cow-dung, and not left starving for want of water.

Plants for a Vase in an Entrance Hall where there is little Light (*A Parson's Wife*).—Hardy *mosses* and *ferns* in winter, along with plants of hardy *Vincas* hanging over their sides, which, in the heat of such a hall, would open their flowers. *Snowdrops, Crocuses,* in early winter, along with *Arabis, Aubrietia, Evergreen Candy-tuft,* and bulbs, in spring and early summer, along with *Primulas,* &c., and *Geraniums, Verbenas,* long-leaved *Geraniums, Calceolarias,* &c., in summer and autumn, often shifted. In fact, anything will do in such a position for a time, and nothing will remain in a good state very long. A gardener has as much love for such hall and passage decoration, as a healthy man would have for the black hole of Calcutta. But then many things look very pleasing in such places for a time, and we are just now making notes on the subject, which shall appear some "other day."

Orange Culture (*G. F. H.*).—Much obliged for the suggestion, but the subject was handled at some length, and to suit various circumstances, not very long ago.

Caterpillars in Greenhouse (*Kate*).—The small hairy caterpillars which have appeared in your greenhouse in great numbers on almost all plants, but especially on the azaleas, swinging themselves occasionally by a fine thread, are, as far as we can make out from such young specimens, the larvæ of the Lackey Moth (*Clisiocampa neustria*), a drawing and account of which is given at p. 207 of our first volume. Hand-pick as many as you can, and try the effect of dusting the plants with White Hellebore powder. This can be easily washed off with the syringe after it has done its work.

Pear Blossom Turned Black (*H. M.—Ferns*).—It is not blighted, but destroyed by frost.

Wild Bees in Lawn (*A Cheshire Rector*).—Pour a little spirit of turpentine into each hole late in the evening, and stop each at the same time with a little earth. Your other request shall be attended to.

French Mustard (*South Wales*).—Salt, 3 ozs.; scraped horseradish, 2 ozs.; garlic, a small clove, boiling vinegar, 1 quart. Let them remain mixed for twenty-four hours; strain, and keep the clear liquor to mix with flour of mustard as required.

Glass for Pit (*T. S. S.*).—The specimen of glass you enclosed will answer excellently.

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WEEKLY CALENDAR.

M D	W D	MAY 20—26, 1852.	Weather near London in 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
20	Th	Ascension. Holy Thursday.	30.238 — 30.014	63—48	N.W.	—	3 a. 4	50 a. 7	9 a 17	1	3 44	141
21	F	Sun's decl., 20° 17′ N.	30.216 — 30.206	65—44	S.W.	—	1	51	10 18	2	3 40	142
22	S	Trinity Term begins.	30.259 — 30.221	70—42	S.W.	—	0	53	11 14	3	3 36	143
23	Sun	Sunday after Ascension.	30.268 — 30.254	66—38	N.W.	—	III	54	morn.	4	3 31	144
24	M	Queen Victoria b. 1819	29.342 — 30.286	71—41	S.E.	—	58	55	0 2	5	3 26	145
25	Tu	Princess Helena b. 1846.	30.208 — 29.921	72—45	S.W.	08	57	57	0 40	6	3 20	146
26	W	Guelder Rose flowers.	29.965 — 29.902	62—34	N.E.	01	56	58	1 11	7	3 14	147

Meteorology of the Week.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 66.5° and 45° respectively. The greatest heat, 89°, occurred on the 23rd in 1847; and the lowest cold, 29° on the 25th in 1839. During the period 105 days were fine, and on 70 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

(*Continued from page* 79.)

ANEMONE. WIND FLOWER.

Generic Character.—*Involucre* of three cut leaves, distant from the flower. *Petals* varying from five to fifteen, below seed-vessel, regular, in one or more rows, imbricated in the bud, oval or oblong, deciduous. *Stamens* numerous. *Filaments* hair-like, much shorter than the corolla. *Anthers* terminal, of two round lobes, bursting lengthwise. *Germens* numerous, collected into a round or oblong head. *Pistils* numerous. *Styles* tapering, short. *Stigmas* simple, bluntish. *Seeds* numerous, pointed, tipped with the permanent *styles*, which in some species become feathery *tails*.

Anemone pulsatilla: Pasque Flower; Danish Pasque Flower.

Description.—It is a perennial. *Root* rather woody. *Leaves* doubly-leafleted, the leaflets deeply cut into very narrow, pointed, channelled, hairy segments. *Stalk* solitary, about six inches high, round, hairy. *Involucre* in many deep, narrow segments, all united at the base, at first close to the flower. *Flower* dull violet, downy outside. *Petals* nearly one-and-a-half inch long, moderately spreading, but straight. *Seeds*, with their spreading, long, feathery, purplish tails, form a round head, and are finally blown away by the wind.

Places where found.—In open pastures on chalky hills.

Time of flowering.—April and May.

History.—The generic name is derived from the Greek word, *anemos*, the wind, and was applied to the species we are now considering, because it frequents open, exposed places, and the namers were pleased thence to conclude that it delighted in being "kissed by the wind." The specific name, *pulsatilla*, is of Italian origin, and also alludes to its being *beaten about* by the breeze. The name of *Pasque* (*Pascha*) was applied to it by Gerarde, our English herbalist, who says he was "moved to name it" Pasque, or Easter flower, because of its time of blooming. Modern botanists, as we saw at page 79, have dedicated "The Pheasant's Eye" to Adonis, but Bion, the Greek poet, says:—

> "As many drops of blood, as from the wound
> Of fair Adonis trickled on the ground,
> So many tears did Venus shed in showers:—
> Both tears and drops of blood were turn'd to flowers.
> From these in crimson beauty sprung the Rose,
> Cerulean-bright *Anemones* from those."

The Pasque flower is sometimes admitted into gardens. The leaves and flowers, if swallowed, cause vomiting. They are corrosive, and cause slight blisters if bruised and applied to the skin. They have been recommended for application to ulcers, ring-worms, and other eruptions. The juice of the petals stains paper green. Goats and sheep eat it, but by horses, cows, and pigs, it is rejected.

Anemone nemorosa: Wood Anemone; Wood Wind Flower; Single White Wood Crowfoot.

Description.—It is a perennial. *Root* tuberous, spreading near the surface, cylindrical. *Plant* about eight inches high, smooth; stem purplish. *Leaves* on long foot-stalks, three or five-leafleted, mostly three-cleft, always irregularly cut; the margin and ribs slightly hairy. *Involucre* of three similar leaves, with shorter stalks, above half-way up the *flower-stalk*, which is simple and a little hairy. *Flower* rather drooping, always solitary. *Petals* white, often purplish at the back, six in number, each above half-an-inch long. *Germens* downy. *Seeds* beaked with the *style* almost their own length. The numerous *stamens*, changing, as in several of the foreign kinds, into small spear-head *petals*, make a pretty double *flower*, more lasting than the single one.

Places where found.—Common among bushes in woods and hedges.

Time of flowering.—April and May.

History.—This fairest and earliest of our Wood flowers has not been without its poet, and we have seen lines which began thus:—

> Welcome! though cold the hour,
> Anemone!
> And shelterless the hazel be;
> Yet spring shall form the greener bower,
> And sunshine bring, and warmer shower,
> To foster thee.

It is acrid and slightly poisonous. Linnæus says that cattle brought into woody pastures have been afflicted with evacuations of blood. In general, however, horses, cows, and pigs reject it, though goats eat it. To sheep it is very hurtful. Its juice is said to destroy warts and corns, if repeatedly applied to them. It stains paper brown. Scald head (*Tinea*) is stated by Chomel to have been cured by the application, twice daily, of its bruised flowers and leaves. A blister of these, recently prepared, is believed to aid in removing intermittent fever, but should be used cautiously. The flowers fold up in a curious manner, and bend downwards, against rain. This plant is sometimes found with yellow dots on the under surface of the leaves, in which state it is figured in Ray, 3. 1. at page 128, and has been mistaken for a Fern (*Polypodium*). Some have supposed these dots the work of an insect, but without sufficient proof.

Dr. Pulteney, in Linn. Tr. ii. page 305, rendered it probable that they are formed of a minute species of *Lycoperdon*, but it has since been shown to be a species of *Æcidium*. These plants are evidently in a diseased state, of a yellow green, and do not bear flowers. The leaf of *Betonica officinalis* is liable to be affected in the same manner (also that of *Fragaria*). The roots afford support for *Peziza tuberosa*. (*Smith. Withering. Martyn. Ray. Parkinson.*)

Several correspondents having inquired of us why the Royal Agricultural Society have offered a £5 prize for the best Dorking Fowls to be exhibited at Lewes, whilst for no other variety have they offered a higher prize than £3, we have made it our business to seek for the actual reasons, and we are glad to be able to state, that such an apparent preference was not founded upon any wish or intention of the Society to intimate that they think the Dorking the breed most deserving of encouragement.

The superiority in the value of the highest prize for Dorking fowls, we are told by a first authority, was founded upon the usual policy of the Society of offering marked encouragement to such agricultural produce as is especially cultivated in the district where the country meeting happens to be held; and, certainly, of poultry, the Dorkings, pure or mixed, prevail in Sussex.

Now, we shall not examine here, in detail, whether the reason assigned is satisfactory as applied to poultry, though we must observe, in passing, that we think that it is not satisfactory. It has not yet been determined which breed of poultry is most profitable as a part of a farmer's live stock, and almost every breed, from the most dwarf Bantam to the most gigantic Malay, has some points of excellence. We think that for every variety, therefore, at present, all prizes should be equal. When the day arrives that the most desirable breed, whether at present existing, or the result of future crosses, has been determined, then will be the time to mark the Agricultural Society's, or any other Society's approval of that breed by giving for it the highest prize.

Other objections have been taken to the Prize List, such as, that the Spanish and Game varieties have been omitted, and there is no doubt that these are to some extent omissions; but let us not forget that the subject was new to the Society; and we know, if the poultry show at Lewes is successful, the Society will devote more attention to the department next year.

It has been rumoured that these omissions are at once to be rectified, but the rules of the society forbid that, and, after all, Spanish or Game fowls are not excluded; for they can obtain prizes equally with all but the Dorking, if exhibited in the *fourth* or *fifth* classes, which are for "any other pure breed," and for "any mixed breed."

These and similar prizes offered in numerous districts of England for the *best* specimens of different breeds, render extremely desirable that the characteristics constituting "the best," should be generally admitted and known. Their estimate must not be left to individual caprice. Judges, with the most correct intention, may very readily differ in opinion of what are good characteristics, unless some leading ones are generally pre-admitted. We have sought for the opinions of good judges upon this subject, and upon the good characteristics of the Cochin China fowl we have the following letter from "*An Amateur*;" one from *Anster Bonn* we shall publish next week. We invite all our readers to send us their opinions upon the points desirable in any breed of poultry; and when we have published, and consulted over such communications, we will endeavour to digest and epitomise them.

"The necessity has been suggested of laying down some standard of excellence and beauty with respect to *Cochin Chinas* at which all may aim, and the nearest approximation to which may bear away the palm. Mr. Bailey, of whom honourable mention is made, and in every word of which I fully concur, has laid down certain rules for guidance, but as it is very desirable that all should agree as to the properties requisite to form a perfect specimen, and what might even *amend* the original form if practicable, I suggest the following requisites, which, I think, are in accordance with Mr. Bailey's views, as far as my memory serves, in the hope that others, more competent, will suggest additional ones, and soon set at rest this agitated and knotty subject.

1. Moderate length of *legs*, inclining rather to short than long. The legs to be yellow, or yellowish, in front, with reddish or flesh-coloured sides, and well covered to the toes with feathers.
2. *Head*, rather small and narrow; face, red; comb, somewhat diminutive in best specimens, single, not too deeply serrated, even (*i.e.* not bent in and out), and upright.
3. *Tail*, very short, so as to be almost buried in the rump feathers, particularly in the hen.
4. *Wing*, small, the extremities of which should be almost hidden—*before* under the breast feathers, and *behind* by the saddle feathers.
5. *Body*, deep from back to breast; wide on rump, and very broad behind, which part, as well as the thighs, ought to be covered with soft, downy feathers, in such abundance as to give them quite a 'Bloomerish' appearance.

"Mr. Sturgeon's are magnificent birds; if they have any fault it is rather too great length of leg, but as he is really a good breeder, feeder, and selector, he will soon correct this. Some have complained of their size, but without reason, I think, for if they lack not the required properties extra size is an advantage.

"Mr. Punchard's, also, are far from despicable, though, for want of crossing, they have somewhat degenerated. This year, however, he too is crossing, sparing no money in the purchase of good birds, so that he may be expected to be quite up to the mark.

"Mr. Andrews and Mr. Steggall have very beautiful birds, but, as far as my experience goes, they appear tender and small. Judicious crossing would no doubt improve them in both particulars.

"There is also a breed termed the '*Lovell breed*,' of the most beautiful form and plumage, but where to be obtained I know not. In fulness of breast they surpass all I have seen.

"Many private gentlemen, who never exhibit, are in possession of splendid specimens as good as any exhibited, and perhaps better, but they value them highly, and having no *need* to sell, and less inclination, they *pot* their extra stock; but I cannot but think they would do better to part with the surplus to a few choice breeders, to improve their stock.

"A careful and judicious cross between the large Shanghai birds and the Cochin has been found to answer well, improving the progeny in size and constitution; but the shortest-legged Shanghai birds must be selected, and those with most of the properties of the Cochins.

"Having thus far trespassed on your time, allow me to ask why light-coloured birds *alone* should be so highly prized, when, for strength and weight, the dark birds are superior;

and when it is an indisputable fact that birds of all colours are imported from Shanghai? It is readily conceded that for beauty the yellows, fawns, and buffs, excel; but it is also known that red cocks, with hackles of an uniform golden colour, produce good light birds *chiefly*, if with light hens, and greatly strengthen the stock. AMATEUR."

FORSYTH MSS.

MR. ANDERSON had just succeeded in bringing the botanic garden at St. Vincent's into regulated beauty, when the tide of war consequent upon the French Revolution reached to our West India islands. It is not within either our intention or command of space to trace the hostile encounters, massacres, and blunders, of that contest within the tropics. The following extracts from letters will shew that Mr. Anderson pursued his botanical researches even amid the horrors which were at his very door.

MR. A. ANDERSON TO MR. FORSYTH.

Botanical Gardens, St. Vincent, July 23, 1794.

I send you among the specimens one which I think is a new genus, and I wish to name it after my worthy friend General Melville; some acknowledgment is certainly due to him from this Garden, as he first formed it, and its interest he has constantly had at heart. You will find also a drawing of it; pray give me your opinion of it as soon as you can. I have not as yet seen any plant that corresponds with it, nor did I ever see, where it was indigenous, but one single plant, which I brought to the Garden, in which it has prospered; I found it on an Island in the River *Essequibo*. If you find it new please publish it in your Society, as I wish to pay a compliment to the General before he dies. Although I am at present preparing a catalogue of the plants in the Garden, it will be some time before I can publish it, from the variety of new species from the continent, and correcting some mistakes in the known, as well as collecting information as to their medical properties, and other uses. Will you give me your ideas for the best plan?

I am getting drawings of all the new species, and those not well known; I have at present a considerable number, and intend persisting if I can afford the expense. You have a specimen of the drawings by the *Melvilla*. They are doing by a deserving young man, a Mulatto, native of Antigua; he has lived with me these twelve months past. It is a natural acquisition, he is self-taught; he is also modest and sensible, and I wish he may have encouragement in proportion to his merits, and I think it a pity such talents should be buried in this part of the world, and I wish my finances could afford to take him out of obscurity. He draws miniatures as well as perspective, a specimen of the last I inclose you; one of them is taken from the door of the Botanic House, in the foreground are two mango-trees and two negroes, with a view of part of the town of Kingston and the Bay; the distant land is the Island of *Beguia*.

The plant dedicated to General Melville, and called by Mr. Anderson *Melvilla speciosa*, unfortunately only proved to be a species of an older genus, and is now known as *Cuphea Melvilla*.

Writing again to Mr. Forsyth on the 13th of May, 1795, Mr. Anderson thus describes the state of affairs—a state which had commenced before the date of the previous letter:—

"Such is my present situation, that it totally precludes me from sending you or any one else anything by the present convoy. May Heaven preserve you and yours from the direful scenes this as well as the neighbouring islands at present exhibit. I hope the measure of our misery and distresses is nearly full. You may only conceive all the horrors and desolations concomitant to fire and sword to have some idea of our present situation, for to describe it I cannot attempt, and what will be the event, the Disposer of all things only knows. One thing is easily foreseen, that nothing but an immediate and strong reinforcement of troops can save these islands from total ruin, and for ever cutting them off from the British empire. The late reinforcements we got were of no other use but adding fuel to the fire. Our enemies are daily increasing in strength, as well from discipline and numbers, while we are daily weakened. Our situation in St. Vincent is the worst of all, particularly from having within ourselves the most savage and cruel of the barbarous tribes in conjunction with the common enemy. If we are overpowered, we can expect nothing but a general massacre.

"All our miseries originate from cursed slavery, and so infatuated are West Indians, and so riveted in their barbarous notions, that they still persist in their wicked schemes. Could the many innocent be excluded, it is a just curse upon them their present calamities. You may naturally conceive I am heartily sick of this country, notwithstanding my strong attachment to this spot, which is now beautiful, and would be much admired in England. Alas! how visionary are all human schemes. Little did I think that after all my pains, and labour, and support in my pursuits, and when the place was nearly arrived to the utmost perfection, that I should at last find myself so unhappily situate. The garden is yet safe and flourishing; during the day I remain in it at the risk of my life, but obliged to fly to the fort during the night, and I am determined to persevere to the last extremity. How happy should I think myself on your side of the water on half my present salary, even on the 'heath-covered mountains of Scotland;' but what happiness to be transported with this spot, with all its inhabitants I have so carefully nursed.

"A few nights ago we had nearly lost the town, and all the island except the fort, which then would have been in a distressed situation; but from the spirited exertions of the Governor, and Colonel of the 46th regiment, the enemy was driven with great loss from the post they had forced. It was a dreadful night indeed, not so much from the dismal scenes of two engagements within three hours of one another, as from the more direful suspense as to our fate As these transactions happened within half-a-mile of the garden, it certainly was an impulse from Providence that I had that night gone with my family to sleep in the fort, having stayed some nights within the house. What must my situation have been with a wife and child, surrounded with wood in dead of the night, remote from any aid, momently expecting to be surrounded with savages.

"Dear Sir,—As you are interested in my welfare, you will forgive these my egotisms and direful events I describe, for what can I write you but of war and desolations; neither I nor any one else can think or speak of anything else. Adieu to Flora's pleasing paths — they ill accord with roaring cannon, clashing swords, and savage yells. Farewell; may you ever be preserved from such scenes and contemplations."

GOSSIP.

H. W. NEWMAN, Esq., of New House, near Stroud, Gloucestershire, has written to us as follows, with a *Proposal for the Establishment of an English Apiarian Society*:—

"Your columns teem with information about bees; I would suggest to the numerous bee-keepers the establishment of a society for the encouragement and increase of these valuable insects in England. Why should we be indebted to the Russians or Germans for a supply of honey and wax? Bees exist in *societies*, and should they not be encouraged by a society of the lords of the creation? I humbly submit this to the consideration of your numerous readers, whose opinion I should like much to see recorded in your useful paper; if they accord with mine, it would be advisable to have a meeting fixed some day next month, to form a committee. An inexpensive dinner in London, Slough, Greenwich, or elsewhere, would be an annual rallying point for all the lovers of the apiary, and I have little doubt that with a small annual subscription from 2s. 6d. to 10s., a number of names might be collected, and a society

formed, capable of doing much good; and extended, if possible, 300 miles from the Metropolis."

We shall most readily co-operate, and shall be glad to receive the names of gentlemen who will aid in the formation of such a Society.

Some time since we noticed, very approvingly, *Boyd's Self-adjusting Scythe*, but we suggested in a letter to its inventor, an improved grass-hook to add to it. We believe he adopted our suggestion, with some modification, but this is now superseded by his "grip" movement, which is a great improvement. It can be used without any grass-hook, and yet be set firmly and to the greatest nicety. It is most simple, therefore, very cheap, yet it is very effectual. Every one who has a Boyd's Scythe, should substitute this grip for the old one.

A correspondent, J. K. T., says:—"The first show for the season, of the *Bath Horticultural Society*, was held in Sydney Gardens, on Thursday, April 22nd. The show of plants was not so large as usual, owing to the absence of several of the principal exhibitors, but there were some splendid specimens shown.

"There was a fine *Seedling Cineraria* shown by Miss Baily; a very large and pure white, delicately edged with dark crimson. It is certainly the finest of its class. There was also another seedling shown by J. Jarrett, Esq., of a very deep violet; both obtained first-class certificates. The first prize for *Rhubarb* was gained by Mr. Shackel, for Myat's Victoria, and it was far before every other sort shown, both as to size and colour. An improved *Brocoli*, shown by Mr. E. Lydeard, of Batheaston, is certainly the best I ever saw, and it obtained the first prize. It is a very fine white kind; the three heads shown were very handsome and compact, and the colour pure as a cauliflower, and it grows to a large size, and quite protected from the frost by the leaves. It is called the *Improved Mammoth*. Mr. Lydeard has the whole stock of it, and is going to send it out this spring. He told me that the seed must not be sown till the 20th of May. It is worthy of a place in every garden. I again saw upwards of fifty heads in Bath market on Saturday last, and it maintains its character. A noteable feature in the proceedings was the admission, for the first time (at 3d. each), of the working classes to a participation in the pleasures and benefits of the show. At the Trowbridge Show, held last year, upwards of two thousand of the working classes visited the show, and it was pleasing to see the delight with which they viewed the productions, and they kept the best of order, and the flowers and fruit were as safe and untouched as they were in the early part of the day. The Trowbridge Society was the first to admit the working classes at a low price to the exhibitions, and other societies are following their good example."

We are very much pleased to learn, that *The Entomological Society of London* have agreed to offer *a Prize of five guineas for the best Essay on the longevity of the different kinds of Bees in the Hive*—workers, drones, and queens.

The various questions, both physiological and practical, involved in this enquiry, which it is desirous to solve, have appeared proper subjects for the Society to adopt for one of their series of prize Essays. The Essay must, of course, present the results of *original experiments and observations* on the subject, commencing at the period of the deposition of the different kinds of eggs. The practical questions as to the number of years to which hives ought to be allowed to stand, and the advisability of retaining stocks or swarms, in case it should be necessary to destroy a portion of the hives, are also especially to be made the subject of the Essay. The Essays are to be sent in to the Society (17, Old Bond-street) on or before the 31st of December next, each with a motto corresponding with that endorsed upon a sealed letter enclosing the real name of the writer.

At *The Exhibition of the Royal Agricultural Society, at Lewes*, in the week commencing on Monday the 12th July, of the present year, in order that cottagers may be enabled to compete in *exhibiting poultry*, it has been liberally decided to admit poultry on payment of two-shillings-and-sixpence for the certificate, instead of ten shillings, as in the case of four-footed animals.

It has been noticed above, that *The Trowbridge Horticultural Society* were the first to set the excellent example of admitting cottagers and others of that class to see the Society's Show, at a very low charge for admission; we have also to notice the liberality of the prizes at the Society's third *Grand Exhibition open to all England*, which takes place on the 25th of August next. These prizes amount to nearly one-hundred-and-twenty pounds. The prizes embrace all kinds of garden produce, from a nosegay to orchids, and from potatoes to pine-apples.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Barton-upon-Humber. First show 14th July (*Sec.* C. Ball.)
Botanic (Royal), June 9, 30.
Caledonian (Inverleith Row), Edinburgh, June 3, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, May 13, June 15, Aug. 26.
Clapham, July 8, Sept. 11.
Chiswick, June 12, July 10.
Colchester and East Essex, May 26, at Mr. B. R. Cant's Nursery; June 23, at Mr. J. Taylor's, West Lodge, Lexdon Road; Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Derby, May 26, Aug. 4.
Durham, June 16, Sept. 8.
Forfarshire (Eastern), June 9 (Forfar); July 21 (Brechin); Sept. 15 (Arbroath).
Guildford, June 16 (Millmead House).
Hampshire, July 1 (Winchester), Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hexham, Sept. 15, 16.
Hull, May 27, June 24, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), June 24, Sept. 9.
Lincoln, May 25, July 27, Sept. 14.
Liverpool, May 20, June 24, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), May 25, June 8†, 22, July 13†, 27, Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Mid Calder (Parish school-room), July 9, Sept. 10.
National Tulip Society, May 27 (Birmingham).
North London, Sept. 14; Nov. 23, Chrysanthemum.
Northampton, May 25, Tulip; June 29, Rose and Pink; July 27, Carnation; Sept. 27, Dahlia.
Oxfordshire (Royal), May 25; June 23; July 29; Sept. 23. (*Secs.*, C. Tawney, and W. Undershell, Esqrs.)
South Devon Botanical and Horticultural, July 13; Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal) May 20, June 17†, 23, July 15†, 21, Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.

Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, June 11, Aug. 6, Sept. 17.
Whitehaven, July 9, Pinks; Sept. 17, Dahlias.

POULTRY SHOWS.

Agricultural Society (Royal), Lewes, July 12.
Cheltenham Monster Show, June 3. (*Secretaries*, Messrs. Jessop, Cheltenham.)

† For seedlings only.

ROOT-CULTURE OF FRUIT TREES.

It has been observed already, that *top-dressing and mulching* are two dissimilar proceedings, both as to their aim, and the means of carrying them out. As to the object in view, it is lamentable to think that even some good practical gardeners do not yet appreciate the exceeding great benefit of these processes.

To be sure, all such *extra* appliances, for such they must be considered, involve an extra amount of labour, not, perhaps, contemplated in the original apportionment of that precious material in a garden. Gardeners, good ones, in the main, may, therefore, be absolved in such respects; for an idle gardener, one who knows his profession, is almost as singular a phenomenon as a dead donkey. Many such remarks then, as to the extra appliances, may be considered as addressed as much to the owners of gardens as to the gardener. Those who stint the amount of labour to a gardener who otherwise possesses their confidence, are about as wise as that government which, possessing an able general in conduct of a most important enterprise, keep him several degrees "below proof" in regrad of the forces at his disposal.

These practices were recommended in broad terms some weeks since, but, feeling their immense importance, we beg to return to them in detail before it be too late. *Mulching*, everybody knows something about; *top-dressing*, as applied to fruit trees, is not quite so patent an invention.

Mulching is either intended to protect the roots of trees from droughts or cold, or to impart manurial benefits. The latter case may, however, be in general best met by the application of liquid manure. *Top-dressing*, according to the strict sense in which it ought to be held, signifies the forming a pasture for surface-roots; a premium held out for the creation and encouragement of an increased volume of fibres, whereby the cultivator, repudiating all tap-roots, which generally encourage gross and immature shoots to the prejudice of the fruit-bearing ones, secures plenty of well-ripened wood; the sure and only condition for abundance of perfect blossom-buds.

For mulching purposes, dung, or dung and vegetable matters, will in general suffice. Top-dressings, when carried out systematically, and, it may be added, scientifically, are of more service still, as not only performing all the uses of mulching, but as forming a surface-soil just adapted to the rising necessities of the tree. They should, therefore, be so compounded as not only to facilitate the extension of roots horizontally, but also to multiply, and actually call into being, abundance of surface fibres. Those who have used them this spring will experience their beneficial effects in a high degree as a preservative against droughts; for, doubtless, two months or more of continuous dry weather has proved a severe test to many a weakly or newly-planted tree, whether in a course of training, or as ordinary standards.

Top-dressings are of especial service to all trees near or past middle age, and which have become somewhat lean through hard bearing or poor soil. Also, to all trees planted on soils of a weak or loose texture, and which, consequently, are liable to suffer through drought. But in all cases, as far as regards age, the process should be performed before the trees are too old or too much exhausted. It ought to be more generally known, and more closely considered, that all trees lose their power to reproduce new fibres progressively with advancing age, dating, in general, in fruit trees, from the commencement of free-bearing. This is, therefore, not an absolute but a conditional period, not dependent on any point of age alone; nevertheless, we think that every kind of fruit, when placed under congenial circumstances, has a *progressive rise and fall*, and that there is a period in the history of each, or a sort of *climacteric*, somewhat analogous to what is termed the "breaking up" of the constitution in the human species. After the latter condition has fairly set in it is of less use to apply top-dressings; the *labours* of the tree must then be narrowed. The narrowing of these labours is accomplished by severe pruning; this omitted, the produce of the tree becomes highly deteriorated, both in the amount and character of the juices, the size of the fruit, and its keeping properties. We may here observe, by the way, that the latter is a case for the application of liquid manure in addition to pruning.

To return: fruit trees should receive top-dressings before too much exhausted, by bearing or age, to produce the benefits of which they are capable.

To all bush-fruit, as currants, gooseberries, and raspberries, top-dressings are of singular benefit, at least, of such as are not on very fertile soils; for those thus happily situated a mulching every second year will suffice. We have some splendid rows of the Warrington, or Aston Seedling, *gooseberry*, which were pruned last November, and immediately mulched, nearly three inches in thickness, with a compost four parts out of five tree or shrub leaves, old tan, &c. These rows are now beautiful to behold; their luxuriance, in defiance of the past extreme drought and frosts, is most striking, and they are covered with fruit. We were examining the top-dressing last evening, in order to ascertain whether it has been already beneficial; it was delightful to witness the profusion of white, active fibres, nestling amongst the decaying organic matter, which still retains a permanency of moisture. Now, it may be affirmed that these bushes would not have received half the amount of nutriment, to say nothing of moisture, had no mulching been applied, and the consequence would have been lean and ill-conditioned fruit instead of an article fit for exhibition purposes; the trees, moreover, would probably have been liable to the depredations of the red spider, or other insects.

Vine borders, too; the earliest house here, containing vines twenty-two years old, with stems a foot in circumference, are a pretty good illustration of the immense benefits arising from a rich top-dressing, in this case composed of fermenting materials. These vines were originally planted in a border much too stiff and too deep—vine-border making was not so well understood in those days. The grapes, although abundant crops, were not thoroughly satisfactory for some years; and various plans were tried to improve the condition of the border without perilling the crop, the grapes being too good to think of breaking them up and replanting. The means employed constantly improved their character, and amongst the rest may be named the use of fermenting material. This was first used, some eight or ten years ago, in a cautious way; and the effects were so manifest, that it was both repeated and increased in quantity. The persisting in it annually has produced a complete stratification of the surface fibres, and, it is almost unnecessary to add, has totally altered the character of the vines, which are now all that can be desired. A few days since, the materials covering the surface were examined; and this year, not only is the surface of the soil clothed with innumerable white fibres, but they are rising up abundantly in the moist

and warm dung and leaves. The temperature of this material has ranged from 70° to 90° all the spring.

We may now advert to the materials for "top-dressing," seeing that it is not simply organic matter, as in the mulching. Loam: a free turfy loam from an old pasture, should form one-half the compost in most cases; much allowance should be made for the character of the soil beneath, and of the subsoil. If the latter is naturally damp and retentive, the compost should, in all cases, be of a lighter character, that is to say, either a greater amount of sand in the loam, or sandy material added to the mass. If a dry and poor subsoil, loams of a sound character, with less sand; and so on. It must here be understood, that very good composts may be made without a particle of loam; any ordinary soil of good staple will do, but not prove so durable as the loam. One-half soil, and the other compounded of any half-decayed vegetable matter, with some dung from the last year's hotbeds, will make a good compost, and may, in all cases of need, be applied from four to six inches in thickness. Our practice is to apply it in a dry state, or, if not so, to spread it until dry, and then to tread it firm. Some persons may wonder why treading should be resorted to; the fact is, loose soils placed in thin layers over a solid substratum are very inconvenient to walk on in showery periods; the surface-dressing is apt to clog to the heels of any one operating on the trees, and this, of course, deranges the texture of of the top-dressing. Trodden firm when dry, these inconveniences are obviated. R. Errington.

HORTICULTURAL SOCIETY'S SHOW, MAY 8TH.

However we may differ on some points, or value the excellence of this or that arrangement of flowers, or other things, there is one point in a subject in which we are all deeply interested, and about that point very few indeed will be found to disagree—the best dish or the best dinner that can be cooked and sent to table will spoil the appetite, if it is continually presented before you. The proprietors of The Cottage Gardener felt something of this, relative to the reports of the great shows round London. First of all, they devoted a supplemental number to their first report. After that the most approved forms of the reports were given in a less stylish fashion, but still very correctly, and at great length, over and over again. Whether it was the Great Exhibition of last year, or the dry easterly winds of this, I cannot tell, but so it is, we have all come to the conclusion, that each report of this season shall be given in a running commentary, without taking heed as to who had the best load of medals, or who went away grumbling without any medal at all; and when the lots were drawn, I was in for it, for this season at any rate; but for fear that I should scald the florists who cook their own flowers, if not their dinners, Mr. Appleby undertook to see that as much justice shall be done to them, as if they were *growers* as well as *cooks*. He went in early, and finished before I arrived, and I had the benefit of his patience and counsel for the rest of the day.

To begin at the beginning. The members of the Horticultural Society, among other privileges, have that of entering their garden on show days some time before the public, through a new gate in Chiswick Lane. I was too soon there, but the place was blocked up then; lords, ladies, commons, and cads, under no provisional arrangement but *universal suffrage*, and if His Royal Highness Prince Albert and Lord John Russell had arrived a quarter-of-an-hour sooner than they did, they would have seen that system in full force, and in broad day-light. When the gate was opened at last, the scene was beyond description. Mr. Dickens's sea-sickness going to America was nothing to it; no, nor even getting your ticket at the Eastern Counties Railway Station in Bishopsgate-street. The arrangement is altogether most foolish and most dangerous, and must be given up; a black-leg or a blue-stocking could get in as easily as I did, if his ribs were as strong as mine. I wrote my name over the left arm of a member of the House of Lords, and if I had written *King of the Cannibal Islands*, instead of D. Beaton, it would have been just the same; everybody expected a broken rib, or a fractured arm; and the bewildered porter thought more of the safety of his tent-box, than of who was, and who was not, a Fellow of the Society. Of course, I felt very much ashamed of my *privilege*, and began thinking on the spot how best to avoid this unpleasant scrambling. I would do away altogether with the writing down of names at the gate, for there is not the least security whatever against the admission of rascals in that, the blackest leg in London can procure a list of the names of Fellows, and choose one of them for his own signature, and he is in amongst the first as sure as fate, and who can help it, or how is he or they to be detected; the thing is impossible. Let every member who wishes it, have a pass ticket along with his regular admission one, or even cut his admission ticket in two, and give one-half to the porter, and the stream may flow in as easily as I write this, and there will be an end to the temptation for getting in by hook or by crook, without paying a stiver, as some had done that morning, for I was hardly through the gate when I overheard two gentlemen saying that a third party, whom one of them knew, had thus passed under false colours.

How charming the prospect, however, when you have once passed the gate, and find your ribs once more in their natural position. A walk as straight as an arrow leads the eye up to the very centre of the end of the large conservatory, the exhibition tents stretch along on either side of this beautiful walk, and a few flower-beds invite you on to the first tent. One of the most difficult problems in landscape gardening is to create interest on a flat surface without distant views; but this problem is solved there; and whoever thought of it had his head put on the right way. The same mind could also be read in another part of this garden, which I then saw for the first time since it was altered, I mean the inner termination of the old long walk which, for a quarter of a century, led you from the lodge near the cloak-room, up to *nothing* behind the council-room. I seldom passed along that walk without thinking that he who first laid it down had a long head too, but very little in it. Whenever you see a long, straight walk, without some object at the farthest end to account for the meaning of it, or if it turns off to the right or left without something—a tree, a bed, or a clump, &c.—to show a reason for the turn, you may note down the designer for a dolt, and something more. This glaring fault in the walk alluded to has been rectified since I was last in the garden, two years ago, according to a hint or suggestion given by Mr. Loudon, eighteen years before, in his *Gardeners' Magazine*.

The garden has been very much improved in every part of it in that time, and I never saw it looking better at this season, but many of the plants are much later than usual; the large *Glycine* had only a few flowers open here and there, and Mr. Davidson, my successor at Shrubland Park, suggested an examination of it, to see if it really produced pollen, as so many of them refuse to do; the first bloom he opened was fertile enough, and so were the next, and the third, and all of them. He, like the rest of us, will be far too busy this season to attend to crossing. From being the first garden in the country, they are going to make

Shrubland garden the wonder of the age—there will be nothing like it in England. The Hon. Lady Middleton showed me the plans that morning at their town house, and explained all the details in full, and I could compare the whole to nothing I had heard of except the Palace gardens at Sans Souci, in Germany. Besides my own hearty good wishes for the successful termination of these extensive improvements, I shall here throw out a hint which I hope will be scrupulously acted on, and that is, that strangers should not press too much for admission to see the gardens while these large works are in progress. Although I shall never lose an interest in these beautiful gardens, I would rather sit up all night to write about what they are doing round London, than that any one should be induced to trespass on Mr. Davidson's valuable time from anything I write, till he has got the whole into *seeable* order, and then I have no doubt they will allow me to describe the wonders in these pages.

Meantime, let us stroll through the exhibition tents at Chiswick. To say that this was the best show the Society ever had in May, would be only one of the old dishes over again. Let me give a proof. I missed the two last May shows, as I have said already; before that, for fifteen years, I saw them all, and most of that time I was officially engaged in helping to give away at least a barrowload of gold and silver medals; and for ten years, at least, I could tell the names of the principal exhibitors the moment I saw their plants, and every new competitor had his skill strictly weighed by the judges, and his stall among the medallers was assigned him at once; in another year or two, we could predict to a certainty if he was ever likely to get a first prize from the progress already made; in short, all the plants exhibited were as familiar to us, after the first season, as schoolfellows. But now, two years has made such improvements in these plants, that if they were to squeeze my poor ribs a second time at that narrow gate I could not tell to whom one of them belonged, or by whom they were grown, and that, I think, justifies me in saying that a great stride has been made in the improved growth and shapes of these splendid specimens. The plant which of all others attracted the most attention at this show, and which puzzled most of the gardeners and nurserymen present, is a native of Mysore, in the East Indies; it was exhibited by Mr. Veitch, of Exeter, and I suppose was discovered by Mr. Lob; it was labelled *Hexacentras mysorensis*, but it should have been *Hexacentris*, which means six knobs, spurs, horns, or projections, being a compound of *hex*, six, and *kentron*, a spur, and these projections are to be seen round the edges of this most singular flower, which I hardly know how to describe in our fire-side way of explaining such things. First of all, the plant is a graceful climber, of about the same strength as the *Clematis cœrulea* or *Sieboldii*, and it was trained in the most fascinating way possible, after this manner:—Suppose a lady's parasol was uncovered, and the handle stuck in a pot; the ribs out at full length, with a ring all round the points; the plant carried up and trained all over the ribs and ring; then suppose an artificial flower-maker to fasten a row of dark brown pieces of string, four or five inches long, and two or three inches apart, all round the ring; from the lower end of each string, four or five flowers turn up clustered together; now let a sylph touch the handle of the parasol with her little finger, and in her most gentle mood, and all these flowers are in motion, like so many fairies dancing in the air, and at a short distance you cannot tell what sustains them, nothing so bewitching has ever yet been done even with artificial flowers. Then, the shape and the colours of the flowers are just as curious. Their shape is nearly that of the Cardinal Monkey flower (*Mimulus cardinalis*), the size much about the same, and the colour, dark brown on the back of the flower, and the open front, facing you, a bright lemon yellow, something like the colours in *Bignonia capreolata*. "Did you see the fairy ring under the parasol?" was everybody's question. Whole groups of gardeners and nurserymen might be seen staring at this wonder all day, D. Beaton amongst the rest, all surmising what order of plants could produce such strange forms, and at last concluding that it must be a kind of *Bignonia*. Mr. Cole, of Oldford, near Birmingham, an old pupil of mine, was the only one I heard dissenting from this conclusion, and sure enough he was right, and his reason is conclusive. The flower has no calyx, and a Bignonia is never seen without one. Mr. Veitch, jun., was on the spot, and he kindly allowed us to handle one of the flowers, and, *presto*, it turns out to be a *Thunbergia!* a full-grown one too. There are the two bracts, the ring where the calyx ought to be, the gaping flower, the exact form of the old *Thunbergia coccinea*, without the projections formed by the wavy sides, from which the plant was named, and which, with a feathery process on the stamens, distinguishes it from the true Thunbergias, according to the most able botanist for that class of plants in Europe, Nees von Esenbeck, to whom the acanthads in Dr. Wallick's collections were entrusted for examination and arrangement, when the great work on the rare plants of India were being published, and very likely a dry specimen of this *Hexacentris* was among the lot, for this German professor is our authority for the name.

The next great lion of the day was *Medinilla magnifica*. It is a most magnificent thing, certainly. Any one who knows a *Melastoma*, *Rhexia*, or *Osbeckia* will have no difficulty in reconizing the leaf of any plant in this extensive order. They have all strong veiny ribs, running from top to bottom, and they always grow in pairs; the half of a leaf of this *Medinilla* would tell that the plant is a Melastomad; the flowers grow in immense clusters, and hang down exactly like large bunches of grapes; and if you imagine a large bunch of grapes with shoulders all the way down, the berries to be turned into flowers, and the colour of the flower, calyx, and footstalk, a pale coral, you have this *magnifica*. It does not want the flowers to be open to show the charms of these congregations of corals, and very few of them were open on this plant, only one here and there on a bunch, and these seemed like pink stars looking through a coral streak in the *Aurora Borealis*. If envy was allowable, who would not envy the Messrs. Veitch for this one plant, if they had never introduced another. Then they grow their plants so well, and train them so beautifully, that few gardeners can come up to them at all.

The plants in all the tents were never better arranged for effect. Looking down a whole side put one in mind of some of the richest views in the Crystal Palace. The banks of *Orchids* were particularly grand and imposing. The *Rose* tents surprised every one. The *Chinese Azaleas* put you in mind of the flowing and flowery imageries of the celestials. The *Geraniums* were few and excellent, *Calceolarias* so and so, and *Cinerarias* execrable, nor worth the pots they were growing in, except two—*Prince Arthur*, the most splendid one I ever saw, a fiery crimson, and *Amy Robsart*, a shade between lilac, purple, and puce. There were three or more collections of *Pansies* exhibited in pots. That by Mr. Turner, of Slough, was almost perfect; at any rate, fully as good as was the best collection of roses at the first trial three or four years ago. The new *Belgian Daisies* are a complete cheat; they are not worth a button as a collection; but there are a few nice sorts, and if they had the *gumption* to "send out" four or five, instead of a full collection, the public would be pleased; but, I repeat it, the whole thing is a cheat, and it is a libel on our common nature that any of us should slur over such things in print, as well as a disgrace to the whole

nursery trade, that a single member of it should sleep soundly on his pillow after seeing such frauds, without exposing them. I only wish I had access to the caverns of the Cyclops, where Jupiter's thunderbolts were manufactured. D. Beaton.

(*To be continued.*)

CHEAP PLANTS FOR WINDOWS, BALCONIES, AND FRONTAGE GARDENS.

A gentleman lately expressed his great surprise, that upon the whole the writers in The Cottage Gardener keep so clear of each other. This has not been arrived at without some trouble; for frequently the statements of a coadjutor on one Thursday have constrained us to look out for another subject, to avoid the appearance of monotony; and for these constrained shifting of subjects I am chiefly obliged to my friend Mr. Beaton. From the window and the balcony, the vase and the basket, there is scarcely any gradation to the small diminutive few yards of a flower-garden; but even these our coadjutor threatens, ere long, to make the subject of his peculiar care, though hitherto they have remained something like common ground between us. I have no doubt that much additional interest will then be thrown over the subject, and in that I will rejoice, as there are few classes whom it would be more important to imbue with a love of floral beauty than our active artisans and industrious tradesmen, who reside in such nice, snug little cottages, that all that is wanted to render their outside eminently attractive, are clean, stubby plants in the window and balcony, a rose or honeysuckle over the door, and a sweet flower-plot in its vicinity.

Owing partly to the zest awakened by our pages, not only are these sweet lilliputian gardens becoming more common, but a different taste for filling them has been engendered. Right or wrong, the old system of planting mixtures of herbaceous plants, and, perhaps, a few shrubs, with all its advantages and beauties—and they were many—is being superseded by the new grouping system. The extremes of society soon meet in the tone of fashion. The labourer must have his group of geraniums and verbenas, as well as his more aristocratic employer. But so far as we can judge, this feeling is chiefly active among the ladies of clergymen, lawyers, and men of business, and descending from them, is being actively diffused among the working middle classes of society. Leaving out of view all discussion as to the merits of separate systems of planting and arrangement, we hail every such attention to flowers as an omen of social progression. In the case of those who have conveniences, who keep a gardener, or an intelligent labourer, the whole affair becomes rather more simple than the growing of a cucumber or a melon. For others, who have no such helps, and no conveniences but their garret, their window, and, perhaps, a sash or two of glass, there has been no lack of information as to making the *very* best of them. From having to resort to many a make-shift, we can place ourselves in the position of almost every reader apt to grumble at his limited conveniences. Instead of getting into a discontented mood, let us make the very best of our circumstances, and then we shall not have time to be grumbling and uncharitable.

But, there are many who wish to enjoy the beauty of beds of flowers in summer, and to be saved the trouble of looking after them in winter. Here was a large, new field for the enterprising tradesman. But the "protection" ways of the trade all but blocked up every avenue of outlet; 18s., 12s., 9s. per dozen for bedding-out plants were sums that comparatively few could pay; not that for many plants, such as large scarlet geraniums, these sums were too high, considering the trouble bestowed upon them in keeping them in pots during the winter, and in a nice, green, growing state. In fact, the tradesman could make nothing of it, and the purchaser was often disappointed, because the plants had become so stunted and pot-bound before being turned out. Other things were priced in proportion, though requiring not a fourth of the time and labour, and the price was thus kept up by the necessary smallness of the demand. Profits were obtained, if obtained at all, by dealing with the *few*, rather than the *many*. It never seemed to occur to our shrewd commercial plant men, that getting rid of twelve plants, with a penny profit upon each, at the same expense for time and labour, that they could dispose of one plant for sixpence profit, was by far the best speculation of the two. The idea of bedding plants for the *million* was horse-laughed. The half-earnest, half-jest prophecy, that some of these plants might, and would ere long, be sold for a penny a-piece, was considered too outrageous even for a joke; and yet, not a vast many months afterwards, Mr. Ferguson, of Stowe, exhibited large trays full of cut *Verbena* blossoms at the Metropolitan shows, stating that these, with many other bedding plants, he was prepared to supply at one penny each, if fifty dozen were taken, allowing from a fifth to a sixth part of these to be geraniums; it being understood that the price would rise as the numbers decreased, that the orders should be given early, and that a goodly number of one kind should be taken.

Many statements on this subject have reached us from sellers and buyers, and I will here fairly endeavour to meet them by answering the following questions.

1st. Can such selling pay the seller? Only in certain circumstances. At one time I struck a great portion, and even now a considerable portion of bedding plants in spring, placing the cuttings in beds, and tiles in heat, and either pricking them out when struck thickly into preparatory beds, or planting out from the first beds at once in May. Scarlet geraniums might be so managed, but then they seldom bloom well when so young. If nice healthy plants, verbenas, cupheas, petunias, &c., struck early in spring and hardened off, will bloom as well, though not quite so early, as those struck in autumn, a dozen of these, we think, would cost less than a scarlet geranium struck in July, potted in August or September, and kept healthy all the winter. Even for such spring-struck things to pay, I should deem the following conditions necessary:—1. The kinds should be old-established varieties, suitable for bedding, so that cuttings in abundance may easily be obtained. Novelty and superiority, in a florist's estimation, must ever be paid for. 2. The varieties grown must be limited to a few well-defined colours. 3. The orders must be for a goodly number of the same kind; the hunting for a few of this, and still fewer of that, would eat up all the profit, nay, from the very time required, entail a loss. 4. Anything like potting the plants could never be thought of. From the pans in which they were struck, or the preparatory beds in which they were pricked out, the plants would require to be carefully lifted, part of the earth shaken away, the roots then laid in damp moss, and the tops in dry, and thus forwarded to their destination. Geraniums and calceolarias struck even in autumn, but just kept healthy in winter, with from one to two square inches of room each, could be thus managed.

2ndly. Would it suit the purchaser? If it did the number would soon be increased a hundred-fold. Success, however, would depend upon himself and his circumstances. Did he purchase such plants in the beginning of April, and possess the means of pricking them out into intermediate preparatory beds, under glass, he might calculate on transplanting fine, rooted, robust plants in the middle of May. Did he wait until that

latter time to purchase, if he planted out at once on receiving them, he would entail upon himself considerable attention and labour in shading and watering until they had taken firmly with the soil. First economy would thus be attended with extra labour, and this would suit those who had time to spare; where that is valuable, and these attentions cannot be given, it will be cheapest and best to give from sixpence to a shilling for a well-established plant. The mere price of a plant is, therefore, no criterion of its cheapness; one plant may be dearer at sixpence than another of the same kind at half-a-crown.

3rdly. "But you lately mentioned the growing of plants wrapped in moss as a mode for bedding plants that would supersede the necessity of potting. Does it answer? Will it be more expensive than sending the roots loose?" To the first we say, most undoubtedly, yes, if the operation is performed in spring, just to get the roots freely working in and through the moss before moving them for packing, and then they go beside each other so snugly and nicely. Our opinion as to the expense is, that the process will considerably increase it. I could, even in a preparatory bed, prick out a considerable number of plants whilst mossing one. The mossing is, therefore, chiefly valuable in the case of plants that make few fibres, and in the case of all that are to be carried or sent to any distance. Mr. Ferguson resorted to it, that his customers might have the advantage of potted plants without their disadvantages. I had never seen Stowe, even in its magnificence; I felt anxious to see it *now*, even for the sake of these bedding plants. I felt both surprised and disappointed; the latter feeling was owing to two causes. I have a largish stock of bedding plants myself, and a great many of these, from being mossed or pricked out early in spring, are now stronger than is generally seen in commercial establishments, just ready to be moved into beds and baskets. Again, several gardeners kept telling me *I should* see the wonderful quantity at Stowe. My expectations were so aroused, that instead of a village of glass houses crammed from front to rear, I fancied I should behold something like a town. The quantity, however, was enormous. I saw the whole process. Thousands of geraniums, salvias, &c., growing on the floors of houses, kept cool, each wrapped in its ball of moss, and set in as much earth and leaf-mould as just covered the moss. Then there were large shallow platforms, formed of the easiest come-at-able materials, stuck full in a similar manner. All these had made beautiful healthy roots, but that my own experience warranted me to expect. Then there were ranges of beds, furnished with a slight bottom-heat, filled with plants that had just received their mossy covering. Others furnished with a slight bottom-heat were filled with cuttings just put in; and lastly, to crown all, a mat was pulled aside, and we were ushered into a shed kept comfortable and warm, where a dozen women were seated in a row behind a low bench, each of them furnished with a pot of soil, a heap of moss, a bundle of mat ties, and below the bench, easy of access from being elevated, were the plants; each was to earth, and moss, and tie, as described in a late number; men brought the plants to each female, and removed the trays when full or finished, taking them to be set in slight hotbeds among soil, after dipping them. The whole affair seemed to be conducted very systematically. I am not aware that Mr. Ferguson has altered his terms, in thus altering his mode of treatment. If not, I do not see how, with the greatest system and energy, it can be made to pay. That, however, is chiefly his concern, though also of great importance to other mercantile men, as well as to the public at large. Different minds will look upon the attempt in different lights. We pronounce no decided opinion. In this, however, the season for bedding, and filling baskets, and vases, and ornamenting windows, I do not think I have stepped out of my way in chronicling the attempt to bring these plants within reach of the masses, who possess nothing in the shape of greenhouses, or pits, or frames. R. Fish.

PROPAGATION OF ORCHIDS.

(*Concluded from page* 86.)

Trichopilia.—Considerable additions have been made to this genus within the last three or four years, yet they are all to be propagated in the same way as the original species. Every pseudo-bulb that is sound and healthy has at its base an incipient bud; if one in that state is cut off it will soon (after being potted in the usual way) produce a shoot, but, as these shoots are generally weak, they require considerable care in watering, as the least quantity of water lodging in the heart of the young growth would soon cause them to decay. The whole of the species belonging to this genus are handsome flowerers, and therefore are worthy of being increased.

Vanda.—The habit of this genus is very similar to that of Saccolabium, but most of them are much quicker growers, and therefore may be increased more readily. As the greater part are really splendid things they are worthy of every attention. The kinds worth increasing are *V. cærulescens*, *V. cristata*, *V. insignis*, *V. Roxburghia*, *V. teres*, and *V. tricolor*. All these are splendid flowering plants. To increase them, if young shoots do not break out towards the base, cut off the upper part of the leading shoot, taking care to have three or four young roots growing from it at the time. Take the part cut off, and put into a basket filled with sphagnum, not too much compressed; water it at the time, and leave it to grow with the usual treatment; the lower part should have some sound leaves left upon it, and also living roots. Give it some fresh sphagnum, and, if needed, a fresh basket; give but little water, but plenty of heat and moisture in the air. It will soon show signs of growth; the uppermost bud will shortly begin to swell and grow, and then the increase is effected. If young shoots are produced at the base of the main shoot, let them first produce a root or two of their own, then cut one off close to the old stem, place it in a basket, and treat it as you would an established plant. *V. teres* produces side-shoots in abundance, and may be increased readily by taking one or more off, affixing them to a block of wood covered with a thin coat of living green moss, syringing them frequently, and keeping them in the warmest part of the house. When new roots are unmistakeably produced, then syringe them freely, and treat them like the rest: they are then separate established plants.

Warrea.—A genus of orchids that are nearly all terrestrial (growing on the earth). They have long, stout pseudo-bulbs, and may be increased by dividing and taking off two of the back bulbs; pot them in the same kind of compost that the old plants thrive in; give no water till fresh roots and a shoot are produced, then give a small quantity of moisture to the root, and they will soon reward you with a strong, good growth.

Zygopetalum.—This is a fast-growing, free-flowering, handsome family of plants. They are readily increased by taking off a portion of each plant and potting them in the same compost as the parent plant is thriving in. *Z. cochleare*, *Z. maxillare*, and *Z. rostratum* are three rather difficult fellows to propagate, but may be done by cutting through the pseudo-bulb, and allowing the cut parts to remain on the block, or in the pot, till the first growths are perfected and the season of rest completed; then, at the time of potting, take off the divided parts, pot them separately, and treat them like the parent plants.

We have now brought our labours on Orchid Culture to a close; it has been a pleasant task, and why? because the culture of orchids is our pleasant occupation and delight, and because we have felt that the instruction imparted would be useful to young beginners, and not be thrown away upon even old practitioners. Our Captain has appointed us another almost equally interesting branch of plant culture to write upon, and we trust that our labours in that part of the field will be as useful as the one in which, for nearly three years, we have been so delightfully occupied. T. Appleby.

FLORISTS' FLOWERS AT CHISWICK.

There was a fair sprinkling of Florists' Flowers at Chiswick, and there would have been more if the society's committee would only give a fair share of encouragement to these universal favourites. Decidedly the best classes and gems of the show were Mr. Turner's *Pelargoniums* and *Pansies in pots*, and about the *Rose* tents there was no mistake; these were really finely-grown, well-bloomed, in high colour, and with every point of merit in perfection. Amongst the Roses we noted the following as being more excellent than the rest, and we are happy to find they are mostly what we recommended lately as being well adapted for the purpose: *Coup d' Hebe*, a large bush, four feet high, with numerous very large flowers, in excellent condition; *Paul Perras*, equally good, with large flowers of a deep colour; *Niphetos*, not so full of bloom, but they were very fine and exceedingly beautiful; *Safrano*, not profusely bloomed, but each flower was very fine, of a beautiful fawn colour; *Souvenir d'un Ami*, rich salmon, and very full of bloom; *Mrs. Bosanquet*, a charming blush-white rose, full of bloom; *Chénédolle*, extremely fine, and very high-coloured; *Duchess of Sutherland*, in fine condition, and a large plant, four feet high, and thickly covered with bloom; *Baronne Prevost*, a fine specimen—this is one of the largest roses in cultivation, one of them on this plant measured five inches across; *Wm. Jesse*, plant not large but well-flowered—a crimson-rose tinged with purple. Dark roses were scarce at this exhibition, hence this variety and *Chénédolle* were the more conspicuous; *Moiret*, pale yellow, well-bloomed.

The following are not in our list (see page 64), and, therefore, may be added to it by the collector, as they were admirable on this occasion:—*Souvenir de Malmaison*, a blush rose of exquisite beauty, large, and well bloomed; *Blairii*, No. 2—this is a fine large double variety, deep rose; it was profusely bloomed; *Emperor Probus*, a rich rose, covered with bloom; *Comtesse Molé*, blush, well-bloomed.

Pelargoniums.—With the exception of Mr. Turner's collections, the day of exhibition was evidently too early for the rest. The gem of the day was Mr. Turner's *Magnet* (Hoyle). This variety sustains its high character; every grower must procure it. In shape it was excellent, and in colour splendid, and the plant was finely grown. The next best was *Chieftain* (Hoyle), also richly coloured. The *Ajax* (Hoyle) was fine in every point; and *Fouquet's Magnificent* was not far behind. *Pride of the Isles* (Luff) is a good geranium, with goodly-shaped flowers and beautiful colours, as also was *Mochanna* (Hoyle). The old Arnold's *Virgin Queen*, a light variety, proved on this occasion, as usual, the best of its class. *Beck's Rosamond* is a pretty variety, and was in the best order.

In *Fancy Geraninms* there was nothing very fine, excepting *Hero of Surrey*.

Cinerarias.—These were shown in quantity. The best were *Marianne* (Henderson's), *Lady Hume Campbell* (ditto), *Madame Meillez* (ditto), *Pauline* (ditto), *Adele Villiers* (ditto), *Lady Gertrude*, *Grandis*, *Rosy Morn*, *St. Clair of the Isles*, and *Mr. Sidney Herbert*. A seedling from Messrs. E. G. Henderson, of Wellington-road, St. John's Wood, named *Prince Arthur*, was exhibited in the seedling tent. It is a good crimson self, with broad petals well filled up, and the least notch in the world. This will be sought after by the growers; habit good, dwarf, and a free bloomer. In Mr. Gaines's collection there was a variety named *Favorite*, with a dark disc surrounded with white, and each petal broadly tipped with porcelain blue, very flat and circular, a fair size, habit good. It is worth inquiring after, as we know none other like it.

Pansies in Pots.—The collection from Mr. Turner showed what cultivation can do. Each pot was a picture; foliage large, blooms also large and numerous. They were quite as fine as if they had been grown in the open border. We noted the following as being the best—*Widnall's Ophir*, *Duke of Perth*, *Bell's Climax*, *Hale's Pompey*, *Campbell's Robert Burns*, and *Prince Arthur* (Silverlock's). These pansies were the admiration of everybody. There were other two collections, but one was badly grown, and the other, though well cultivated and well bloomed, was composed of old indifferent varieties, showing that cultivation alone will not do, there must also be varieties in the lot of sterling good properties, or all the labour for exhibition purposes will be thrown away. In the seedling tent, Mr. Turner exhibited his pansey *Sir John Cathcart;* form excellent, upper petals bronze shading off to purple, centre deep golden-yellow, lower petals bronze; it is of a good substance. This is a really good variety.

Seedling Mimuluses.—There were some good varieties shown of these dashing flowers. One came from Mr. Gaines, and was named *Eximius*. It has a yellow centre, with crimson spots on the lip, and each petal had a large, well-defined, rich crimson spot on it; a decided improvement, the flowers being so large and well formed. Mr. Sims, Florist, of Foot's Cray, Kent, sent a seedling *Mimulus*, No. 18; the ground colour pure white with bronze spots, flowers large and well-shaped; desirable and pretty. He had, also, one curiously spotted and blotched; but the branch on which were the blooms had drooped so much that we could not pronounce an opinion of its merit. We should like to see it again.

Calceolarias.—There were one or two collections, but though tolerably grown, the flowers were small and not well-shaped. There is room for great improvement in this class of flowers. A bloom or two of a desirable seedling was sent by Messrs. Sharp and Cole, from Birmingham, that promises well; it was named *Fulgens*.

T. Appleby.

ROSES IN POTS FOR EXHIBITION.

(*Continued from page* 102.)

GENERAL MANAGEMENT IN SUMMER AND IN WINTER.

Summer Treatment. — Such plants as have finished blooming in May should at once be placed in the pit, where they should have abundance of air night and day, unless frost intervenes, when they should be protected from its ill effects. It must be remembered that they are much more tender than plants that have not been forced, and if exposed to the full air and light at once, they would suffer greatly, both for that season and the following one; but if they are gradually inured to the change no harm will accrue. If there are no pits or frames to spare, they must be set out-of-doors, and protected by hoops and mats. The mats should be placed over them at night for three or four weeks, and also during the day, in bright sunny weather, but on cloudy, showery days expose them fully to these benign influences. If the wood becomes ripe, and the leaves fall,

they should then be placed where the sun will not reach them—behind a wall or a low hedge, and plunged in a bed of coal-ashes. If they are fully exposed to a summer's sun, there is danger of their breaking prematurely into growth before the season of forcing returns again. Care should be taken that they are not deluged with water, especially the China and tea-scented varieties. By thus keeping them at rest early, they will, when set to work again (after being duly pruned), start into growth, and bloom again much more freely than newly-potted plants, because they have had a longer season of rest, and have a large accumulation of sap to cause a vigorous growth. It is quite easy to obtain, in the autumn, a second crop of flowers, especially on the *Perpetuals*, and *Hybrid-Perpetuals;* but this is by no means desirable if the same plants are for early bloom. Those cultivators who grow them merely for ornamental purposes may bring some of these from their resting-place, and allow them to bloom through November or December in the greenhouse; but the cultivator for exhibition will be cautious of such a proceeding, as it would be taxing his plants too much to have two crops of flowers in one year.

Such roses as are grown in pots for exhibition as late as September, should, during the early part of summer, be placed in such a situation as is most likely to keep them back, or retard them from blooming early. The large class of autumnal-blooming roses are, as a matter of course, the best adapted for such seasons of exhibition; yet numbers of China and Tea-scented, with their hybrids, may be managed so as to bloom in great perfection during the latter part of the summer and commencement of the autumn. This management consists in pruning off the early shoots of blossoms, and thus reserving the strength of the plants to produce their finest blooms at the season they are required for showing.

Plants that have been exhibited in June or July should be, as soon as their bloom is over, plunged in a bed of ashes, fully exposed, excepting for a week or two at first, when they should be shaded from the burning summer's sun. By the time these have ripened their wood, the cold nights of autumn will have arrived, which will sufficiently prevent premature or untimely growth.

Watering.—During these summer months the plants must be duly supplied with water; the quantity and time of applying it depends of course upon the weather. In the house or pit the vicissitudes of our climate cannot prevail to any great extent; here they must be liberally watered, not on the drip-by-drip system, but by a thorough wetting of the entire quantity of the soil in each pot, due consideration being had to the state it is in at the time. The China and Tea-scented varieties must be watered cautiously even in the house or pit; it has been already remarked that these varieties are more impatient of wet at the root than the rest, and it is quite true. In the open air the plants are, or should be, plunged in coal-ashes, and consequently do not require so often watering as when the pots are exposed to the drying influences of the sun and wind; still less water would be required if a mulching of short manure or stable litter was spread over the surface of the mould in the plunged pots. This is advantageous in more ways than one; it not only prevents evaporation from the soil, but enriches it when the needful water is applied, or the gentle showers from the clouds fall upon them. This mulching is highly beneficial; the most successful growers of roses in pots make use of it.

During the early part of summer the plants will be greatly benefited by a meal now and then of liquid manure. Roses thrive well with guano-water, but it must be a very weak solution; a quarter-of-a-pound of genuine guano will, when thoroughly dissolved, make three gallons quite rich enough for roses in pots. This point must always be remembered in watering any plants with liquid manure: if the plants were growing in the open soil the liquid manure would be more diffused, but in pots it is confined, and the tender roots being generally either coiled round the bottom, or close to the sides, they are exposed to the strong and stimulating properties of the liquid manure much more than when in the open ground; for these very satisfactory reasons the liquid manure for plants in pots should be much more diluted, or weakened, than if the same plants were in the common bed or border. We have no doubt much mischief has been done by the application of liquid manure without due consideration of these important facts. T. Appleby.

(*To be continued.*)

THINNING CULTIVATED PLANTS.

There is a strong resemblance between the laws which govern society and those which relate to horticultural affairs; both inflict a penalty on the culprit who violates them, as well as on those who omit to perform their allotted share in carrying out the proper rules and regulations. In the vegetable kingdom, the penalty of omission is certainly not less than that of commission: unassisted nature will and can do much, but when left to follow her own course she will invariably be found to shower her favours in greater profusion on those objects which require expulsion from the garden, whilst the legitimate occupant will be ousted by the more sturdy growth of the less important one; in other words, neglect a garden, and the weeds common to the district will overrun the other crops; carry that neglect still further, and a miscellaneous crop of trees will overcome the weeds, which, in their turn, will become a prey to each other as they struggle on for the mastery, until the spot which once marked the industry of man is converted into a forest, differing only from the primitive one by the increased vigour of its products, which we suppose to be enhanced by the previous cultivation. Now, though we do not expect to see this gloomy picture realized to the extent here illustrated, yet we daily see it exemplified in another way. The small seeds of many vegetables, when committed to the earth, are there left to struggle for themselves against enemies more robust, or, if some kind hand expels the foreign foe, the straitened circumstances at home often call long and loudly for a more extended sphere, and it too often happens that before emigration to any useful extent takes place, disease and death have done their work, and it is only to the vigour of constitution in the patient that we can look for a successful rally, and even when that takes place it is at a sacrifice of time and trouble that could be ill spared.

Now, our readers will easily see that we refer to the weeding and thinning of vegetable crops in proper time. The latter operation is certainly not less important than the former, but we know that it is often productive of more harm by its non-performance. To make this subject more plain, let us suppose a crop of *Early Turnips* to be just showing two or three rough leaves each, and standing, as sown, in thick tufts, with occasionally here and there a separate plant; now we will suppose them to stand a day or two longer, and, on examination, we find that the plants forming the tufts have elongated the footstalks of their leaves (called, in botanical phrase, *petioles*) while no proportionate development of leaf has taken place, the only exception (and that only partial) being the outside plants, the outer leaves of which, enjoying the benefits of fresh air, have attained a more sturdy habit; still, that is only on one side, the interior leaves are suffering from the same cause

as its next neighbour, while the plant which had the good fortune to be allotted a few square inches to itself presents a robust decumbent habit, as much as to say—I will obtain a good foundation on *terra firma* before I ascend further. If the crop be still left undisturbed or unassisted, the chances are that this plant soon comes in contact with the struggling family, or, it may be, with another plant as formidable as itself; then comes the conflict. A strong tenacity to life enables more than the proper number to compete for existence, until the powers of the plant and those of the soil are so far exhausted as no longer to be able to assimilate the food calculated to form a good useful root, and the crop, to all intents, is ruined. Now, though we do not often see this carried out to such an extent in a garden, yet we often enough see it partially so, and we need hardly say that the evil is in proportion to the extent of neglect. If, in addition to what we have said about the top taking harm from the over-crowding, we add that the root is equally hurt, we are only affirming another of those immutable laws of nature which we should do well to copy. A superfluity of plants withdraw from the ground those juices which are the most important to be retained there to support the legitimate objects; and to allow a number of useless plants to occupy the ground around one intended to remain, is to rob that space of the nutritious qualities of most consequence to the one left; rather, therefore, select single or outside plants, where such can be had, and destroy those patches entirely. Of course much depends on circumstances, the nature of the ground, &c., but in *Turnips* the above directions are never wrong.

Onions require a somewhat different treatment; it is then advisable to select the largest and best plants, and the crop, when thinned, standing much thicker than turnips, single plants cannot always be had to give the crop that uniform regularity so conducive to its beauty, if not also to its well-being, because we presume in the sowing of that and other crops, the trite saying of that celebrated personage, who sent his gardening *protegé* into the world with the advice, "to sow thick, thin in time, and keep on good terms with the cook," has been fully acted on in the first of these duties. Now, before these pages reach the reader, many a bed of onions will have been thinned in early districts; still, much remains to be done; and as some difference of opinion exists as to the distance the crop ought to stand apart when finally thinned out, some have gone to great extremes in trying to prove that if left at wide distances a much greater weight of useful produce is the result. In this opinion we by no means coincide, because so many external circumstances influence the crop, that mere distance alone will not atone for other disadvantages. In a general way, we sow our onions in continuous rows, one foot apart, and in thinning allow about six or seven inches, oftener less than more. Those who have ground more than usually rich, deep, and moist, without being wet and sour, may allow a larger space between with advantage; but those to whom a fortnight's dry weather advances their onion crop some three weeks towards maturity, will do well to consider whether they can afford space that will perhaps never be occupied; not but that a thin standing crop will withstand a drought longer than a crowded one; but a medium one is the most likely to be the most productive. To attain that happy medium, the cultivator must exercise a considerable share of his own discretion. If his ground be dry and gravelly, and a hot dry season follows, his crop can scarcely, under any circumstances, be good; if a wet season occurs, then he may thin a little wider, and he will have size as well as numbers. One great error in thinning onions, is the habit of leaving so many to draw for after use; we have seen this would-be-act-of-carefulness carried to a hurtful extent. The season when onions are thinned is the one in which their progress is most rapid, and when left very thick they soon suffer. We therefore recommend but few to be left for the purpose above, and do not let economy defeat its own purpose.

The above remarks relate with equal propriety to other crops, as well as turnips and onions. *Carrots* and other root crops ought to be thinned before their tops intermix in such a way as to draw each other, or, in other words, they ought to be thinned as soon as it appears that the plants are in a manner safe from those enemies which prey on them so much while in a young state. *Lettuces* sown where they have to remain may also be similarly treated. Even *Peas*, when sown too thick, may be advantageously thinned; and it is very common to pull up every alternate *French Bean*, when standing less than six inches apart, if on good ground. *Broad Beans* the same, even *Spinach* is also benefited by a more liberal allowance of room, while many things are improved in quality in being so treated, and of the latter class is *Parsley*.

In making the above observations on thinning the crops of small seedlings to such a distance as to obtain the most remuneration for the space occupied, we are reminded that a like evil arises from planting certain crops too thickly. *Scarlet Runner Kidney Beans* will remain longer in bearing if only half the number of plants be employed that are often seen. *Cauliflowers* will also get larger if, on good ground, they have more than four square feet to each plant, instead of less. *Potatoes*, too, are well known to produce most when planted tolerably wide; still there is a limit with them; and such crops as *Sea-Kale*, *Asparagus*, &c., which require more room still, are subject to some special treatment; therefore we exempt them from the present "weeding," unless it be in those cases where they are sown to remain, in which case the war of extermination to all useless numbers must be carried out here as elsewhere.

J. Robson.

TO CORRESPONDENTS.

Rookery.—"In answer to your correspondent's query—I know of at least a dozen rookeries in this part of the country (Trowbridge), where they always shoot the young ones, and the number of nests do not decrease; it is a well-known fact, that if the young ones are not killed for several years, the number of nests is less every year. The cause I have never seen explained. I saw a singular instance of rooks entirely deserting a rookery, this spring, after building their nests, and the female sitting on the eggs in most of the nests. A pair of crows had been observed to be about the trees for several days; in a day or two after every rook had left, and the colony was entirely deserted, and not a rook has been observed to settle on the trees since, although there was at least from 40 to 50 nests there. I suppose the crows must have beaten out the rooks and destroyed the eggs, as their leaving cannot be accounted for in any other way.—J. K. T."

Another correspondent (*H. W. N.*) says—"In answer to your correspondent about his rooks, he may shoot one-third of the young ones, as in the following year the number of nests will not be diminished."

Morels.—"*J. K. T.* is evidently no naturalist, or he would know that no morels vegetate in a long continued drought, and a north-east wind such as we have so long experienced; but, on the contrary, they grow when the weather is *moist*, and the air from 55° to 60°. The weather has just changed, and in a week I have little doubt but morels will be brought into the house by those whose business it is to frequent the old woods and plantations. If *J. K. T.* wishes to satisfy his incredulity, he may send three postage stamps, and I will either return them or send the weight in morels, when they are brought in. *Jews-ears.*—These fungi grow in the same places as *morels*, are three, four, and six inches diameter, and are higher-flavoured for culinary purposes than *morels*, but are so brittle till dried as not to bear carriage."—W. M.

Various Queries (*Leguleius*).—Always glad to oblige, but request our correspondents would not ask too much at a time. *Clematis azurea.*—This is not generally struck, but grafted or inarched on any hardy variety. *Epiphyllum crenatum.*—Upper part of leaves have got sickly, and crumbling like dry tinder, after being kept dry in winter, and previously grown in summer, and hardened off in autumn. It has very likely been too dry, and also too cold, it wants rather more heat than others you mention, and from growing strong is not very well fitted for a window. Your only chance now, is to give the shoots coming from the bottom every encouragement in your power, watering with warm water, by-and-by with manure-water, keeping it as much in the light as possible. If grown pretty well, turn it out against a fence right in the sun, in August, and house again by the end of September. It is supposed there are two varieties of it, one much freer in blooming than the other; we suppose

we have the best, for though *blooming*, it has not done so freely with us as other kinds. As you have the means, we would first get the plant into a forcing-frame or pit, then by the end of June into a cold pit, kept rather close, and then as advised above, into the open air. Of course, if so injured as not to grow much, there would be little use in putting it out-of-doors this season. *Cactus Jenkinsonii.*—The healthy plant you describe should be fresh potted when the flower is gone, provided there are not a number of more buds swelling, when the potting should be delayed. If well managed, a plant of that size should have a number of flowers. Give it a good position in your window in any case, and treat exactly for next season as Mr. Fish recommended lately. *Cactus Ackermannii.*—This similar, but better fitted for a window, *Epiphyllum truncatum* is rather different, as it blooms in winter, spring, and very early summer. If in a window, it should be kept cool in winter, so that the flower-buds will not open until the days are long, as in dull cold weather in winter there would not be enough of heat in the window, and the flowers would be pale if opened at a distance from it nearer the fire. By ripening well in the autumn, you may have the flowers at will in spring, by putting plants into your cucumber pit for a week or two. *Tuberose.*—We would have given you more encouragement if they had been planted a fortnight ago, instead of to be purchased a fortnight hence. The best bulbs will be gone; but if you get some good sound ones you may try. They will do well in the window. *Cucumbers' leaves spotting and going into holes*, &c.—When we see a leaf carefully sent we may judge; at present, as there is no appearance of insects, and you have such abundance of atmospheric moisture, we think it likely that one of these bright mornings or forenoons *air has not been given soon enough*, and a scalding has been the consequence. Pull off the most of the fruit, and if the roots are all right, you may yet get fresh foliage and good fruit too. Be careful how you use the sulphur; if there is neither mildew nor insects, keep its application, and hat mildly, to the back of the frame, and shade for some time to come.

Weeds Destruction (*G. F. H.*).—Quite right, destroy before they seed, is the thing. We have written, exhorted, lectured on this great subject, and the very men who applauded convincing statements to the echo, will let the hedge-rows of their fields be a perfect brake of thistle, and other winged seeds, that will give them a fine crop of unwished-fors', during many a year to come. It takes many a long year to clear land of even annual seed weeds. Every fresh turning of the soil brings a fresh bevy into vegetation. Would that some seedsmen got into the knack of preserving valuable seeds as carefully as mother earth keeps those confided to her care.

Failure of Grapes (*Blegthon*).—Your case is very lamentable. It is impossible to say for certain what may have been the cause of your grape failure. The brown seams, you describe, scars, &c., may, indeed, arise from an unusually low temperature continued for many hours. Anything that would arrest the circulation of the sap might cause it; such as a sudden declension of ground heat, stagnated root moisture, and the application of manurial liquids too highly concentrated. We cannot think that snow-water simply penetrating through the roof could possibly occasion it. Please to look over our back numbers on vine culture. Few yet thoroughly appreciate the importance of proper root culture. Too much stress by half has been laid on modes of pruning and training; such has tended to draw attention from points of higher import still. We think that you will find few *liquid manures* more generally useful than guano water, from the best Peruvian. For enriching vine roots, we should use three ounces to a gallon of water, applied at a temperature of 90°. We, however, as a matter of economy, use daily a mixture of dunghill drainings and soot water, in which a little guano is mixed. The dunghill drainings are stale, and the whole much reduced by more water. All these things require caution.

Bees (*Doncaster*).—"Your Mr. Payne tells us, in this week's number of your valuable periodical, to hive a swarm, and put it in the place of the stock from which it proceeded, and to remove the stock two or three hundred yards from its old place. Will the bees therein be reconciled to this new position? Is there not great danger of the stock being entirely deserted?" All the bees in the stock-hive that have flown will join the swarm; *this is the thing desired.* The large quantity of brood in a hive at the time a swarm departs from it, will be quite sufficient to re-people it, but not so abundantly as to cause the departure of a second swarm.

Tree Bleeding.—"In your number of the 29th April, I observed a question, 'Elm-tree Bleeding (*G.*). In reply, I beg to give him my experience in *curing bleeding in vines.* In one of my hothouses where the wood last year had not been properly ripened, in pruning them this season, they bled very much, so much so, that the sap came out in little globes and trickled down the shoots. I caused my gardener to wipe off the moisture, and take a camel hair brush and apply to the place a coating of an article called 'Collodion,' which may be had from any respectable chemist. You could get a 2 oz. vial for about 6d. Collodion, when applied, instantly dries, and forms a sort of varnish, which is quite impervious by moisture. The bleeding instantly stopped, and permanently too, although it is three months since I applied it. If this should be effectual in the elm-tree case, I shall be glad to hear of that through your columns. I shall be glad if you add my name to the list of those *willing to exchange plants.—Robt. Wotherspoon, Maxwelton House, Paisley.*

Œnothera macrocarpa (*S. B.*).—Large plants of this may be turned out of the pots at once, or at any time between this and the middle of July, and they will run and cover a bed the same season. Let the shoots be trained down and *fixed* till the roots get hold of the bed.

Dorking Fowls (*E. W. P.*).—I *know* these to be bad layers in some localities. If yours are *very* fat, feed sparingly for a short time, and try an entire change of food. Give them porridge of barley-meal or middlings, and let them eat it quite warm—a meal every morning. Are you sure, however, that the hen-house is safe from rats and other depredators?—Anster Bonn.

Egg-eating Hens (*A Constant Reader*).—I have no reason to think eating egg-shell teaches fowls to eat their eggs, for our egg-shells have been *broken up* and thrown out for the last ten years, without producing mischief. Watch your fowls narrowly, discover the delinquent, place her where she can be constantly watched at laying time, and prevent her having a chance of eating eggs until she loses the habit. An indifferent hen I would sacrifice at once, but a handsome Cochin-China one cannot relinquish so easily. Make sure, however, before blaming the hens, that the eggs are laid with shells, for soft eggs, and those which are broken by accident, the very best disposed hens will eat. In addition to the excellent feeding which you give your fowls do not forget that they require gravel-stones. To the cock still suffering from *cold after being cured of the pip*, give one dose of castor-oil, a teaspoonful, and afterwards a desert-spoonful of cod-liver oil, every morning. Shelter him as much as possible from cold wind and heavy rain.—Anster Bonn.

Roses (*Thomas L.*).—The classes are as follows:—Charles Duval, Coupe de Hebe, and Great Western, are *Hybrid Bourbons*; Fulgens, *Hybrid China*; Celina, a *Moss*; Blush Hip, a *Hybrid Provence.* There have been *Kings* and *Ne plus ultras* in more than one section, so we cannot determine to which yours belong; but, after all, we would place no reliance whatever on the names of plants sold at these marts. All your roses may turn out to be one sort. We cannot tell if they are worked plants without seeing them; if they are, you can easily see the parts of union; being dwarfs, they are likely to be on their own roots.

Browallia.—Mr. Beaton has received some specimens of *B. Jameisonii* just coming into flower very freely, but had no communication along with them.

Tobacco Paper.—*T. B. L. Y.*, writes to us from Leeds as follows:—I have seen a report in The Cottage Gardener, April 15th, from Mr. Errington, stating the gardening world should set their faces against tobacco paper, because the dealers have adulterated it. A great portion of it is, we are informed, rough paper from paper warehouses, deluged in lamp-black water, to which a little tobacco juice has been added for conscience (?) sake. I quite agree with Mr. Errington on that point; a great portion of it is sent out from Leeds, I believe, but I beg leave to inform Mr. Errington that he can be supplied with a genuine article at 10d. per pound, if he applies either to Mr. John Kearsley, nurseryman, Woodhouse-hill, Leeds, or to Mr. John Wilkinson, 1, Boar-lane, Leeds, which I am certain will give Mr. E. satisfaction, if he gives it a fair trial."

Hen's Nests.—*A Constant Subscriber* says:—"Having read an article in your 187th number upon poultry, making a remark upon the very spare broods of this spring, supposed to arise from the long continued dry weather, perhaps the following plan of preparing the nests may be acceptable (it not being in many localities safe on the ground or banks). I place some mould in the usual nests, then line it neatly with *fresh-cut* turf, perfectly smooth, and formed a little hollow; placing on this a very little soft straw. I occasionally sprinkle the nest and eggs with lukewarm water. Under the above plan I last week hatched forty-seven chicks from five hens, and the hens are free from that intense itching, so common after setting. Should the above hint be useful to the success of poultry-rearing, it will prove a gratification to an old amateur."

Moving Crocuses (*A Would-be Good Gardener*).—It is not a good plan at all to take up crocuses now, or till their leaves die, and then only once in three or four years, for the purpose of dividing the roots to allow them more room. If you have a bed of them this spring, and you wish to clear it for summer plants, you must take up the roots carefully, and preserve the leaves green as long as possible in another part of the garden by watering them well. After the leaves die you may take up the roots, and keep them dry till the beginning of October, then plant them. Your *Magnolia* must be one of the varieties of *grandiflora* which never flowers; the flowering sorts are very rusty-like on the under side of the leaves. We never make plans, or alter plans, of flower-gardens, because that would expose us to endless annoyance.

Diseased Orchids (*Orient*).—The leaves you sent have very much surprised us. Yours is a fearful case, and your graphic account of the progress of the disease amongst your best orchids is really distressing. No doubt the disease comes from using hard water, and that from the iron tanks. The drip from the roof of the house has nothing to do with it, even had any fallen, which you say there has not. We are almost sure it proceeds from water strongly impregnated with iron. We would advise you to procure a number of earthenware pots in the form of a wide cylinder, 1½ feet deep, placed near the tank; let these be filled up every day with soft water as it is used, and use that only to water the plants, and for syringing them. The steam from the hot water in the iron tank will not hurt them. We condole sincerely with you, and heartily wish the change of water may have the effect of bringing your plants into health again.

Roses (*F. W. T.*).—The roses you mention as having been neglected in potting, and yet have bloomed tolerably, should be set out of doors as the weather will permit. In a month's time they will be, in a degree, in a state of rest; then you may repot them, correcting at the time the fault of drainage. Prune them in then, but very moderately, leaving every leaf on below the cuts. They will break, and some will show flower, but these must be all nipped off. In the autumn, prune as directed in our back numbers, and do not force them very early. By this treatment you will bring them round into a good healthy condition, and in another year will find them bloom better than ever.

Indian Seeds (*F. B.*).—Your Indian seeds are not much worth. They are mostly tall-growing shrubs, and require much space to grow them well. However, if you like to try them, sow them in a light soil thinly covered, and place them either in a hotbed or in a warm stove near the glass, potting them off singly into small pots as they grow up, and afterwards treating them in the usual manner. Those from Nepaul, without specific names, we can tell you nothing about; they may be good, and are worth trying. No. 1 is a stove shrub, with yellow flowers; 2 is also a tall stove shrub, with large yellow spotted with crimson flowers; 4 we do not know, nor can we find it in any catalogue; 5 is a stove shrub, with small blue flowers; 6 is a pretty foliaged plant requiring the stove. The rest are unknown.

Greenhouse Shading (*An old Subscriber*).—Your greenhouse, you say, is at an angle of 30°, and often, during the hottest part of the day, the thermometer stands at 90°. This is a heat with a vengeance. Your plants must suffer greatly. Your means of giving air must be very bad. This must be remedied immediately. You ask, would it be desirable to

shade your house? Of course: it is not only desirable, but absolutely necessary, if you wish to keep your plants alive. Procure some canvass; sew it together the size of your house, fasten it to a flat piece of wood at the top of the house; fasten the upper end or side to a roller, with a wheel at one end; to that wheel nail one end of a cord, long enough, when the shade is drawn up, to tie to a bevelled piece of wood near the bottom of the house. This is all the machinery you require; and then, when the sun shines, and the shade is let down, and plenty of air given, your plants will be comfortable and happy.

Unhealthy Rhododendrons (*A. A. J.*).—Your rhododendrons are suffering for want of fresh peat earth. Repot them immediately, and place them out-of-doors, in a shady situation. You imagine liquid-manure would do them good—in their present sickly state that is more than doubtful. Let them become healthy, and then it might be of some service. Steep about a bushel of rotten dung, sheep's dung is the best, in ten gallons of water, stir it up frequently, and when used, dilute it with as much more water. Use it every third time the plants are watered.

Forcing Roses.—*Lora* writes to us thus:—"Allow me to enquire why you do not enumerate, amongst suitable kinds of roses for pots, any Damask roses. I grow roses in pots to the extent of 400 or 500 pots, and I find some of the Damask roses do exceedingly well. I have at present in flower, *Calypso*, with fifty-five flowers and buds; *Madame Walden*, thirty-four; *Semiramis*, forty; *Duchess de Rohan*, forty-two· all with foliage in most perfect order. I have suffered much from mildew in pots, and my Damask roses alone escaped. The following roses do well in pots with me: *Double-margined lip*, it bore *sixty* flowers in the winter of 1851, and has now upwards of fifty; *Odorata* (Tea-scented), bore twelve flowers in January, and has fifty-three flowers and buds now; *Lady Montgomery* bloomed early in March, had about *thirty most perfect* flowers, which lasted longer than any other rose I ever saw; this appears an old and forgotten rose, it is much like a handsome moss without the moss. Mildew has attacked my rose-trees (apparently in most vigorous health). I tried sulphur in vain, but succeeded in keeping the mildew down by brushing the diseased leaves and buds with an old tooth-brush. I do it *every* morning, which is somewhat tiresome. Can you tell me of a better remedy?" We are glad you have pointed out the Damask varieties of roses as being good for forcing. No doubt they are so, especially the varieties you mention; but you must remember Mr. Appleby recommends kinds fit for exhibition. Now, we apprehend the Damask roses are scarcely fit for that purpose. They are scarcely double enough, and their petals are rather thin and flimsy. Hence they would suffer much on the journey to the exhibition tent. Your question regarding the *mildew* is not an easy one to answer satisfactorily. The cause of this disease is *a low, damp atmosphere*, and its cure is a brisk heat, washing the floor frequently with a mop, and kept clean; abundance of air should be admitted at the same time as a higher temperature is kept. This establishes a free circulation among the plants, which is the best preventive of mildew. Your brushing it is a good practice, and should be persevered in.

Fuchsia-leaves Curling (*C. B.*).—You say the leaves of your fuchsias curl, some sorts more than others, and you want to know the cause, and its cure. The cause, no doubt, arises from diseased roots, or too heavy soil. The cure—cut them down, shake off the old soil, and repot in light, moderately-rich compost, and place them upon a gentle hotbed, giving no water till fresh roots are made, then give a moderate supply, and little air at first, gradually increasing it as the plants advance in growth. The disease is not common—in fact, very rare; there are few plants, if well managed, so free from disease as the fuchsia.

White Cactus (*Highburiensis*).—By a white cactus we suppose you mean *Epiphyllum crenatum*, which has large white flowers, and is very showy. You may obtain this of Mr. Appleby, at Messrs. Henderson's, the Pine-Apple Nursery, Edgeware-road. The *Cactus blanda* may be a fine variety, but we never heard of it before.

Bees.—*W. H. V.* says.—"Last summer, but late on, a very good swarm of bees was put into one of Nutt's hives, and it has done very well up to last week, when, on last Friday, about 12 o'clock, a swarm appeared to be coming from it; but, as far as I could judge, they were all young bees, being all very light-coloured. After settling in a very straggling manner, and examining them, I could not find a queen; but another person who keeps bees about five hundred yards from me picked one up at his hive, whither the young bees had fled likewise. What I want to know is, whether, considering all this, the hive the bees have left will do any good, for since it happened they have been as busy carrying in pollen as possible?" Your bees leaving Nutt's hive, and alighting in the manner you describe, looks very much like a desertion, except that pollen continues to be carried in. If this goes on, you need not fear but there are both a queen and drones in the hive; if they continue carrying in pollen, by all means let them alone. If they have no store of honey in the hive give them barley sugar.

Vine Culture (*An Old Subscriber*).—You will see an article on the vine subject shortly which will meet your wishes, we think. As many require similar information, we at once cheerfully comply.

Mildewed Peach (*E. T. H., Southampton*).—Your peach shoot appears to be covered with mildew; we never saw so gross a case. There are no insects on it; pray what are those you saw? Sulphur liberally dusted over the infected parts is the best remedy for mildew; but the remote cause should be sought, and this is generally stagnation of root; either excessive moisture, or a dry, hard-baked soil will cause it, anything, in fact, which debilitates or checks the root action. Try three inches of rotten manure over the roots, if the soil is dry, and water on it freely with water at 90°. Your wood is immature; nobody can grow peaches well without ripening the wood. Who would not water asparagus beds in such a "run" of dry weather.

Caterpillars (*J. C.*).—Your small brown caterpillars which attack the opening leaves of the peach, apricot, pears, apples, &c., belong to several distinct species of small moths, of the family Tortricidæ, one of which (and they all have similar habits), is figured in The Cottage Gardener, third volume, page 81, under the name of *Tortrix angustiorana*. There are three modes of proceeding to destroy them; all of course troublesome, but still effectual. First.—Washing the stems and shoots in winter with an oily or sticky mixture to destroy the eggs. Second.—Pressing the leaves when folded up together to kill the caterpillars; and Third—disturbing the leaves in June when the moths appear, and catching and destroying them in insect nets. I know no other or better means to be adopted. The caterpillars do not burrow into the heart of the stems, but become chrysaled on the rolled-up leaves; so that some other kind of insect must have been at work to form the holes like gimblet holes, of which J. C. complains.—J. O. W.

Pansies (*W. B.*).—Of any of the nurserymen who advertise in The Cottage Gardener.

Packing Eggs (*W. A. E.*).—Pack them, with the *small* end downwards, in bran, with a good quantity of this between every two eggs, and the whole in a stout box, directed "Eggs—This side up." Other question next week.

Mistletoe (*An Amateur*).—We have no doubt you can be supplied at the proper season. You cannot do better than you are doing in your melon frames; but there is no need of soft soap, the clay and sulphur will be sufficient. Tobacco smoke will not destroy the red spider. Your other notes next week.

J. N. B., Kirkcaldy.—Your question is quite out of our province, and involves a point of international law which would require some pages to answer fully. As a broad principle, the children's children would be Americans or Canadians, but capable of being rendered otherwise by many circumstances too numerous to particularise.

Egyptian Geese.—*N. F. H.* having been unfortunate in their management, wishes to know if there is anything peculiar required for them. Our correspondent has too many ganders, and wishes to exchange a gander for a goose. Apply to Mr. Bailey, 113, Mount-street, Grosvenor Square.

Garden Visiting (*A young Amateur Gardener*).—No charge for admission is made at any of the gardens you mention.

Seed Sowing (*E. D. B.*).—Sow *anemones* early in February in boxes, if you have shelter for them; but in the open border, sow early in April. Sow *hollyhocks* and *pelargoniums* in March, in pans, in a gentle hotbed.

Rabbits.—*Mr. Robert Campbell, Paisley*, wishes to know where he can obtain rare breeds of rabbits.

Cucumbers (*J. K.*).—The liquid-manure you applied was not too strong, but when did you apply it? It is rarely required until after the fruit begins to set. Other question next week.

Balsam Seed (*G. H. B.*).—We never had any, nor do we remember promising any.

Fowls (*T. K. R.*).—You may keep ten hens and two cocks in the space you mention (twenty-four yards by five yards), partly sown with grass, partly laid down with gravel, and well supplied with chalk, &c. Pray refer to our back numbers and indexes for answers to your other queries. "Middlings" are the moderately-fine pollard.

Osage Orange (*W. S. P.*).—When you said the plant you inquired about was "a hedge plant," and spelt it "*Orage*," you threw us upon a false scent. The Osage Orange is *Maclura aurantiaca*, and is a hedge plant in *North America!*

Manuring Vine (*A Doubter*).—If your friend means that the surface soil of the border for six or seven feet, measuring from the stem, should be manured with rich compost, he may be right, if the vine is old or weak, but to surround the stem eighteen inches high with such compost would do no good.

Cochin-Chinas *v.* Spanish Fowls.—More than one correspondent seeks for information as to which are the most profitable of these two breeds, and we shall be glad to receive from any correspondent the result of his or her own experience. We thus give *Incubator* the best evidence that we are not prejudiced. If the Spanish are the most profitable, we shall be very glad indeed to know the fact.

Weight of Bullocks (*W. Churchill*).—The mode of ascertaining their weight by admeasurement, whilst alive, is as follows:—When the beast is standing square, measure round the body with a string, just behind the shoulder-blades, this is *the girth*; then measure with the string from the root of the tail to the fore-part of the shoulder-blade, this is *the length*. Multiply the girth by the length, and the result multiply by 23, which is the average number of pounds weight in a square foot of the beast's surface. The amount thus obtained is about the weight of the beast. Thus, if the girth is 6 feet 4 inches; and the length 5 feet 3 inches, these multiplied together show there are 31 square feet of surface. 31 multiplied by 23 give 713, which is the weight of the bullock in pounds.

Names of Plants (*Rev. R. M. Evans*).—Yours is *Piptanthus Nepalensis*; a half-hardy shrub. (*T. M. W.*),—A species of *Amelanchier*. It may be layered, or grafted on the quince or hawthorn. (*Emma*).—1. A species of *Ornithogalum*; 2. *Pyrus spectabilis*; 3. *Orchis morio*, B; 4. *Scilla non-scripta*, B; 5. *Amelanchier*, species uncertain; 6. *Stellaria gramineus*, B; 7. *Asperula odorata*, B; 8. *Dielytra formosa*; 9. *Lithospermum arvensis*, B; 10. *Pulmonaria officinalis*, B; 11. *Myosotis arvensis*, B; 12. *Phlox subulata*; 13. *Omphalodes verna*; 0. *Anemone appennina*, B. Those with the letter B added, are British plants. (*P. J.*).—Your plants are, No. 1. *Fabiana imbricata*, a half-hardy shrub, by seeds and cuttings. 2. A species of *Epacris*, we think *E. campanulata alba*, by cuttings of the tips of young shoots in spring, under bell-glass. 3. *Leschenaultia formosa*, by cuttings of tips of young shoots. (*C. L.*).—1. *Ledum buxifolium*, or *Ammyrsine buxifolium* of the Cottage Gardeners' Dictionary. 2. *Polygala chamæbuxus*. 3. *Pelargonium quercifolium*. (*Senex*)—*Pelargonium denticulatum*, native of the Cape of Good Hope; introduced in the year 1789. (*Rustic Robin*) — *Narcissus bulbocodium*, or Hoop-petticoat-flowered Narcissus.

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WEEKLY CALENDAR.

M D	W D	MAY 27—JUNE 2, 1852.	WEATHER NEAR LONDON IN 1851.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
27	TH	Ven. Bede.	30.093—30.066	63—46	N.W.	—	55 a. 3	59 a. 7	1 36	8	3 7	148
28	F	Avens flowers.	30.254—30.203	68—39	N.E.	—	54	VIII	1 58	9	3 0	149
29	S	K. CHS. II. REST. 1660. Oxf. T. ends.	30.367—30.349	75—47	N.	—	53	2	2 20	10	2 53	150
30	SUN	WHIT SUNDAY.	30.407—30.402	74—45	E.	—	52	3	2 41	11	2 45	151
31	M	WHIT MONDAY.	30.470—30.407	68—35	E.	—	51	4	3 5	12	2 37	152
1	TU	WHIT TUESDAY.	30.363—30.195	76—43	N.E.	—	50	5	3m32	13	2 28	153
2	W	EMBER WEEK. Oxford Term begins.	30.181—30.042	72—41	N.W.	—	49	6	rises.	☺	2 19	154

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 69° and 45.5° respectively. The greatest heat, 91°, occurred on the 28th in 1847; and the lowest cold, 30° on the 27th in 1830. During the period 110 days were fine, and on 65 rain fell.

THE exclamation is too usual—"What enormous prices nurserymen ask for their plants!" It is too usual, because, however high the prices may be, it is quite certain that unless a nurseryman has a very large business, even those high prices do not render his trade profitable. This is demonstrated by many evidences, and first of a few we will enumerate. We may state that lately we had occasion to correct a list of the Nurserymen of the British Islands, and it was necessary to strike from the list, only prepared about four years previously, about one-eighth of their number, the replies being, they are "dead, and no one succeeded," "gone no one knows where," and "emigrated." Another evidence is afforded by the extinction and rapid changes in the partnerships of many of the great nurseries about London—extinctions and changes being, we regret, *not* occasioned either by the golden deposits rendering the further exertion needless, or by one having gathered enough making way for another to succeed in the "gold diggings." Neither are such changes and failures the result of increased competition in these our days, for in what are irrationally called "the good old times" a wealthy nurseryman was as rare, and a nurseryman in difficulties was as common, as now, though their produce cost then twice as much, and took ten times as long to transmit to their customers than in this age of railways. As an example of the best, yet suffering nurserymen of "the good old times" let us select JOHN COWELL. He was the contemporary of Langley, Miller, Switzer, and other distinguished cultivators at that period, the beginning of the last century, when a love of gardening and planting, and new designing, was in the ascendant. He is spoken of favourably by his contemporaries; his catalogues which survive to us show that his nursery stock was rich in variety, and his published works demonstrate that he was skilled in his craft; yet all these requisites for success were not able to preserve him from the curse of the money-lender. He became involved; but he was an honest man, and, above all, a man who, though he withheld no effort to insure success, looked to God to give the increase. That increase came, not in the common course of business, however, but by the blooming of a rarely-flowering plant, and the editor thus epitomises the result in the preface of *A True Account of the Aloe Americana:*—"Having had many losses and great misfortunes, and not being in the best of circumstances (though always honest, and showing himself so through the hardest of his disasters), Mr. Cowell looked upon this surprising shooting up of this plant as a singular gift of heaven, sent for his relief." "To show his sense of the bounty, he applied the first profits of this great gift to discharge those incumbrances."

We have few particulars relative to Mr. Cowell; all that we know of him is derived from his own works and those of Bradley and Switzer. From these we learn that he was a nurseryman at Hoxton, near London; and when he published his *Curious and Profitable Gardener*, in 1730, "Gardening," he says, "had been my study for thirty years." In the year when that book was published he appears to have died, for in the year following Switzer speaks of him as "late of Hoxton."

From Mr. Cowell's work just mentioned, we will make a few quotations; for they give us various interesting particulars in the history of some of our cultivated plants.

"The *Ananas*, or *Pine Apple*, was brought from Surinam and Curasao to Holland, where it was first cultivated in Europe, and brought to perfection by a gentleman at Leyden." Thence to "Sir Matthew Decker's garden at Richmond." "There is one way of increasing these plants which I observed at a curious garden at Mitcham, in Surrey, belonging to Charles Dubois, Esq., which I never saw elsewhere, viz., that gentleman let several fruit stand on the plants a long time after they were ripe, and almost every knob of the fruit there pushed out a young plant, so that I believe there were thirty upon one head."

"The Papa Tree (*Carica papaya*) we have had raised in England many years since, when first exotic gardening was set on foot by the late famous Duchess of Beaufort and Dr. Henry Compton, Bishop of London." Mr. Cowell grew it, and so did Mr. Sherwood and the Chelsea Physic Garden.

"The first of the *Guava* that I have heard of that ripened its fruit in England, was at Badmington, the seat of his Grace the Duke of Beaufort, in that famous lady's time who began exotic gardening in England."

"The *Chadock Orange* (Shaddock, *Citrus decumana*) of the West Indies is the same with the *Pumplemus* of the East Indies, but being brought first to America by Captain Chadock, as a curious fruit, the people of that country gave it his name."

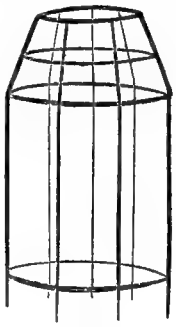
Mr. Cowell offers an excellent suggestion (though borrowed from the Dutch) by which "Florists' Flowers may have pompous names," yet those names may be turned to a useful account, by intimating their prevailing colours. Thus, *White* flowers should have a name beginning with *W.* as *Winifred;* if *White* and *Crimson*, *William* the *Conqueror*. *Blue* flowers should have names beginning with *B.* as *Blucher*, and so on.

"The *Double Yellow Rose*," says Mr. Cowell, "is hard to blow, but in the open ground it will do very well if you cut it down within a foot of the ground every summer after its blooming season, and make an artificial shelter to put over it in wet weather, for this rose will never open well if wet comes upon it while it is in bud. It loves a full sun and an open air."

"The first large *Common American Aloe* came with Sir Walter Raleigh and Sir Henry Carew. At its first coming it was put into a pit, and covered in the winter with boards, as the late Sir Nicholas Carew told a gentleman of my acquaintance. In Mr. Vesprit's garden, at Lambeth, was the first that attempted to blossom in England, and is said to have come from one of those brought hither in Sir Walter Raleigh's time, so that it might perhaps be one hundred years old when it pushed forth its flower-stalk, which was in the reign of King William III. Mr. Vesprit built a glass case for its shelter, but either through the fault of the workmen, or the extraordinary high winds which followed, the glass case was thrown down, and the flowering-stem broken off. King William and Queen Mary, who cultivated the most curious of exotic plants and flowers in England, ordered a draught to be taken by Mr. Brogolane, a famous painter, some of which branches painted, are now in one of the Royal Palaces." Mr. Cowell bloomed it perfectly, and published a description of the plant and its history in 1729.

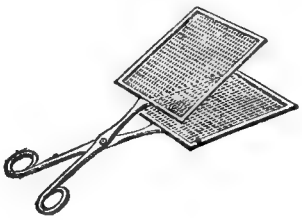
"The first of the Great Torch Thistle (*Cereus hexagonus*) that was in England, was in the gardens of the late Dr. Compton, Bishop of London, at Fulham; and as I am informed, the seed of it was sent to his lordship from Barbadoes."

Other communications have reached us in answer to our inquiry for the descriptions of implements useful, but which may be little known, to gardeners; and among those communications are the following, both especially desirable for the present season of green flies and queen wasps:



"*A Fumigator.*—This is a machine of my own conjuring and making. The covering is an old scarlet moreen curtain, made to fit by the women. On one side there is a flap-door, for the purpose of lighting a self-acting cigar; which capital idea for fumigating frames, &c., was suggested in The Cottage Gardener some time since. I think I have improved upon it a little, and detail the preparation and make:—1 oz. of saltpetre dissolved in a pint of boiling water, in which some coarse brown paper is to be well-soaked and thoroughly dried; it then constitutes touch-paper. Cut this touch-paper to any desired length, and about one-and-a-half inch in breadth. Procure a smooth tapering piece of stick, then, with a needle and thread, secure the end of the paper to it, spread some tobacco upon the surface, roll it around the stick, allowing one edge of the paper to overlap the other as you do so, and do not wind it too tightly; then, with the needle and thread, stitch the edges of the paper together on one side, beginning to do so at the largest end of the cigar; draw out the stick, the whole is completed, and an open orifice is left running up the centre, through which the air will rush and act as a sort of bellows, to assist the touch-paper in its self-consuming process when the cigar is lighted. Now procure a stick, slit it at the top, and intrude a small stone, or something of that sort, to keep the fork open; fasten the stick in the soil, and the cigar in the slit. Place the large specimen pot-rose, geranium, or what not, that may be infected with the fly, alongside, and the fumigator over all, untie the flap, light the cigar, tie the flap again, and woe betide the unfortunate aphides. In large gardens they can afford to "manage these things better," but for little people like myself, a like construction will be found exceedingly useful. I have had it in use two years, and should not like to be without it.—Upwards and Onwards."

The next implement is *Underwood's Wasp Catcher.* This may be obtained of the inventor, at 56, Haymarket, London, and is very effective not only in catching queen wasps, but any other insect. Every wasp killed during April, May, and early June, prevents the foundation of a nest.



Last year Mr. H. Howlett, at that time gardener at St. Osyth Priory, near Colchester, obtained the prize offered by Mr. Savage, in our pages, for six baskets suitable for entrance halls, plant-houses, &c. Since then Mr. Howlett has transferred his services as gardener to Haveringland Hall, near Norwich, and many inquiries reaching him relative to the construction of such baskets, he has published a pamphlet, well illustrated with lithographed plates, entitled *Practical Rustic Work; or the Uses to which the Cones of the Fir Tribe may be applied.*

Many are they who admire rustic work for the edging of flower-beds, receptacles for flower-pots, arbours, &c., and to those many we recommend this little publication. Directions are given for making them, and drawings of designs, with the dimensions, are given. Having seen the baskets, we can state confidently that they are excellent for the purpose intended.

FORSYTH MSS.

The last letter we quoted closes the correspondence of Mr. Anderson with Mr. Forsyth. We know of no reason for its thus terminating, for the one did not die until 1804, and the other survived him nine years, and died in the island of St. Vincent.* In 1798 he forwarded to the Society for the Encouragement of Arts and Manufactures an Essay on *The state of some of the most valuable Plants in the Botanic Garden in the Island of St. Vincent's.* The Essay is published in their Transactions, as were two others in 1802, on the Culture of the Clove and Cinnamon Plants. For these papers he received a silver and gold medal from the Society. Mr. Anderson was a Fellow of the Royal Society of Edinburgh, and some authorities state that he had conferred upon him the degree of Doctor of Medicine, but we do not know by what University, nor whether he really attained to that honour. Mr. Anderson died about the year 1813, and since his death the botanical garden at St. Vincent's has been abolished.

The next man of science from whom a letter to Mr. Forsyth appears among this correspondence is Sir Joseph Banks. At page 169 of our 4th volume we gave a biographical sketch of this distinguished patron of science, and awarded to him due praise. We did not allude to the weak point of his character, because the good that he effected renders that weak point comparatively inconspicuous. The letter now before us, however, renders it necessary to explain that Sir Joseph coveted prominence, and to have his power acknowledged; he loved not only to be "first fiddle," but to have his leadership rendered apparent. Mr. Anderson laments this in more than one of his letters to Mr. Forsyth, and Sir Humphrey Davy said of him, "he required to be regarded as patron, and readily sanctioned gross flattery." There is reason to believe, that although President of the Royal Society, to which office he had been elected in 1777, yet that when the Presidentship of the Society of Antiquaries became vacant, in 1799, he aspired to that office also. The friends of the Earl of Leicester, who wished this noblemen to fill the office, made public this design, and the publicity they gave to the alleged design

* We have readers resident in the West Indies; will they, or any other friend, oblige us by obtaining for us the inscription on Mr. Anderson's monument?

occasioned the following letter. It is dated from Soho Square, April 11, 1799.

SIR JOSEPH BANKS TO MR. FORSYTH.

As I find myself abused in the public newspapers by Lord Leicester's friends, who insinuate that I am to be proposed as a candidate for the Presidentship of the Society of Antiquaries, I find it necessary to canvass as warmly as possible for Lord Lewisham, in order that my friends may know my real wishes on that subject; I shall, therefore, be much obliged to you if you will attend the Society of Antiquaries on St. George's day, and vote for Lord Lewisham as President, and for such a council as his lordship shall recommend, among which Mr. Brand will certainly be included, his services entitling him in the opinion of all.—— Lord Lewisham's friends to be continued in his present office, whoever may eventually be elected President.

GOSSIP.

The anniversary dinner of the *Gardeners' Benevolent Institution* takes place on the 14th of June, at the City of London Tavern, Bishopsgate-street; and Charles Dickens, Esq., has consented to preside on the occasion. A most appropriate chairman he is; for no living author, and few among the dead, have done more to throw a charm about that "noble poverty"—the good man subdued in a struggle against adversity—which this charity is especially intended to sustain. Every one of our readers who can spare the money will not only have a great intellectual treat, but will confer a good aid to the institution. Tickets are issued to admit ladies into the gallery, and the speeches, as well as music, we have no doubt will be worthy of their audience.

The *Bath and West of England Agricultural Association* hold their annual meeting at Taunton on the 9th, 10th, and 11th of June. They offer *Poultry Prizes* (£1 for the best, and 7s. 6d, for the second best) for every variety of the domestic fowl, besides other prizes for turkeys, geese, ducks, pigeons, and rabbits.

We are very glad to find that at length *Elvaston Gardens* are to be opened occasionally to the public. They have been forming during twenty years under the combined taste of the Earl of Harrington and his head gardener, Mr. Barron. No expense has been spared. Yews, even 100 years old, have been conveyed from a distance to fill up and darken the shades of the plantations, for the contrasts of colour as well as of form have been artistically consulted; and, by degrees, a space has been covered with gardens that were certainly not contemplated by the noble owner when he first permitted the line, and level, and spade to go to work. The time and occasion of throwing open the gardens are for the benefit of the New Temperance Hall, at Derby, and on Whit-Monday the 31st instant. Elvaston is close to the Borrowash station of the North-Western Railway.

In addition to the Botanic Garden, the *Royal Pleasure Grounds* at Kew will continue open to the public, every day except Sunday, from the present time until the 18th of September. They form one of the most delightful exhibitions in or near the metropolis. They are open from one until six.

H. W. Newman, Esq., of New House, near Stroud, Gloucestershire, says:—

"As some of your correspondents have suggested that *the first swarms of bees* should be announced, I beg to mention that I had a first swarm this day (the 17th), at 12 o'clock. It came from a straw hive containing a fine swarm hived the 12th of June, 1851. I have been watching for drones for a week, but never saw any until to-day; there were several with the swarm, as I counted at least half-a-dozen go into the parent stock late in the day. There was no hanging out: the only symptom I noticed was that for three days previously the bees from the parent stock were very busy at my water trough, and on the morning of swarming they *ceased visiting the water entirely;* and although it was a calm, gleamy, hot sun for four hours (thermometer 63° in the shade), with electric clouds about, the bees were unusually quiet at *eleven* o'clock. I left the garden, and on my return I found them clustered and quiet on the *small* branch of a red currant bush. I hived them in about three minutes. I always find the first swarms in May easy to hive. About the middle of June, with a temperature of 75°, and a more scorching sun, the case is very different. I have not had a swarm before the 21st of May for a good many years, but I have always found that the first swarm comes from the straw hive. My single and double boxes, mostly Nutt's, are generally fourteen days later. I find, also, nearly all my prime swarms go off without clustering at the entrance. My present situation is a warm valley, the hills much wooded. It is by no means a good bee county, but plenty of sycamore-trees are a great help at the end of April and beginning of May."

Another correspondent gives us the following *Country Notes;* and we should like to have many like them:—

"The fruit on the walls in this neighbourhood (Trowbridge), in spite of the many frosts, seems, in most places, very abundant. I called a few days ago at Laycock Abbey, near to Chippenham, the seat of H. F. Talbot, Esq., the inventor of the Talbotype Drawings. This is a very well-kept old place, under the management of Mr. Wilkins, the gardener. The wall fruit-trees promise a very abundant crop of all kinds, and the vegetables seem to be looking very well. The greenhouse was in very good order, but chiefly filled with plants and seeds for botanical purposes. I saw *Jasminum dianthiflorum*, a very nice plant for the greenhouse, so pretty, and beautifully sweet. Also a nice plant, *Francisea angustifolia*, the flowers of a beautiful blue, and do well in a cool greenhouse. In the conservatory was *Tacsonia manicata*, covering the house with hundreds of its beautiful scarlet flowers; also a fine plant of *Kennedya latifolia*, running the whole length of the rafters, full of bloom; and a magnificent plant of *Bossiæa rotundifolia*, planted in the bed of the house, covered with bloom. In the flower borders are a great variety of hardy perennials, especially of the bulbous-rooted kinds; many of them varieties not usually met with, and some I have never seen before. Many have been brought to this country by Mr. Talbot, who is a good botanist. In the rock-work I saw a beautiful *Alpine auricula*, with a number of large stems of flowers. It was brought from the Alps last season by Mr. Talbot. It was very pretty, and perfectly hardy.—I. K. T."

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Barton-upon-Humber. First show 14th July. (*Sec.* C. Ball.)
Botanic (Royal), June 9, 30.
Caledonian (Inverleith Row), Edinburgh, June 3, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, June 15, Aug. 26.
Clapham, July 8, Sept. 11.
Chiswick, June 12, July 10.
Colchester and East Essex, June 23, at Mr. J. Taylor's, West Lodge, Lexdon Road; Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.

Derby, Aug. 4.
Durham, June 16, Sept. 8.
Forfarshire (Eastern), June 9 (Forfar); July 21 (Brechin); Sept. 15 (Arbroath).
Guildford, June 16 (Millmead House).
Hampshire, July 1 (Winchester), Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hampton Wick, July 1. (*Sec.* Mr. B. Regester.)
Hexham, Sept. 15, 16.
Hull, May 27, June 24, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), June 24, Sept. 9.
Lewes Grand National, July 14 and 15.
Lincoln, July 27, Sept. 14.
Liverpool, May 20, June 24, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), June 8†, 22, July 13†, 27, Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Maidstone. Fete. June 24. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), July 9, Sept. 10.
National Tulip Society, May 27 (Birmingham).
Newbury, June 18, Sept. 3.
North London, Sept. 14; Nov. 23, Chrysanthemum.
Northampton, June 29, Rose and Pink; July 27, Carnation; Sept. 27, Dahlia.
Oxfordshire (Royal), June 23; July 29; Sept. 23. (*Secs.*, C. Tawney, and W. Undershell, Esqrs.)
Scottish Pansy (Glasgow), June 9.
South Devon Botanical and Horticultural, July 13; Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), June 17†, 23, July 15†, 21, Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
Staines, June 9.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, June 11, Aug. 6, Sept. 17.
Whitehaven, July 9, Pinks; Sept. 17, Dahlias.

POULTRY SHOWS.

Agricultural Society (Royal), Lewes, July 12.
Bath and West of England (Taunton), June 9, 10, and 11.
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).
Cheltenham Monster Show, June 3. (*Secretaries*, Messrs. Jessop, Cheltenham.)

† For seedlings only.

MANAGEMENT OF YOUNG VINES.

We have met with numerous amateurs, within the last two or three years, who seemed more puzzled with the management of young vines than old ones; let us, therefore, look into this subject.

First, as to *Modes of Training*. Some twenty years ago, when the training of fruit-trees in general received more attention than root-culture, many fanciful modes were suggested. Since then, however, what is termed the spur system has been gradually gaining ground, and it is difficult to meet with any other mode in modern gardens of any pretensions. As, therefore, we feel bound to advocate such practice, a reason must be given. In the first place, it requires no labour to prove that it is by far more systematic than most other modes. It is, also, more certain; that is to say, there is greater probability of a house, well established on this system, producing uniform crops, than by any other mode. It renders the subsequent cultural practice by far more simple; so much so, that all the finger or knife work requisite afterwards might be described in less than a score of such lines as these. And to add more weight still, no other mode can produce equal crops with so little shade. This latter argument highly concerns the amateur, who generally has plants beneath the vinery roof; and if such be not the case, it is worthy notice, that vines thus trained do not smother themselves so much as by most other plans; there is less confusion; a definite reason exists for every shoot. This mode, therefore, we beg at once to recommend to all the readers of The Cottage Gardener.

To be fair in the argument, we must show "the other side of the books," and see if there be anything of weight against the spur system. With the most rigid scrutiny, one thing only appears, and its validity is not absolutely certain. The size of the bunch is here alluded to; some think that it is not so large as by the rod or cane system. Under some circumstances this may be true; but as a set-off it may be affirmed, that the individual berries are equally large, we should say larger. Those who aim at enormous bunches for exhibition purposes should remember, that generally gain in size of bunch is loss in size of berry; as, indeed, it may well be, for who can expect one shoot to mature one-hundred-and-fifty berries equally fine with another carrying only fifty; that is to say, allowing each the same area of light overhead? But this is not all; who can possibly expect equal flavour? All over-cropping is assuredly averse to the highest amount of flavour; no experienced gardener will dispute this. Thus, then, stands the question as to modes of training; but as some queries recently come to hand desire information on both practices, we must say something also about rod culture, especially as we know full well that the gentleman who plays the first fiddle, as Mr. Beaton facetiously observes, is exceedingly desirous that all opinions or practices of any weight should be duly represented in these pages.

To begin with *the season of planting*, say the end of March, the young vine just emerging from a rest state, must, if not previously done, be pruned back to three or four buds. If, however, the cane be strong, and the roots in fine condition, a yard in length, or even more, may be left.

In *planting*, care must be taken to dislodge every root, for if from a pot the roots will be found coiled up and entangled. They must, therefore, be liberated with care, and the ball of earth should be quite dry, to facilitate the proceeding. The roots must, of course, be spread out as carefully as the branches of a tree are trained, and a little superior soil strewed over them, three inches in depth. Equal parts, old sandy turf, and old hotbed manure, thoroughly incorporated, will cause them to root speedily.

When the buds have grown two or three inches, *training* must commence; a selection must be made, a leader must be determined on. The others may now be progressively pinched, simply removing the points, but not all at once, say one each week, until only a leader is left. As the leader extends it must be carefully trained up the roof. We are *now* advising as to the *spur system*. As soon as the shoot acquires a tolerable amount of luxuriance it will begin to burst forth into laterals or side-shoots, and these must be pinched back in a progressive way, leaving one eye with its leaf *carefully* preserved. We would pinch these laterals at but a slow rate, say one every four or five days, if they develope freely, and not doing so until they were nearly a foot in length. Thus may matters proceed until the cane has reached three-parts way up the roof, when, if luxuriant, we would pinch away the point, although the ordinary practice is to let them ramble to the back of the house first. By thus pinching, those principal buds below, destined to become a permanent nucleus for spurs, become exceeding plump, and of course sprout strongly in the succeeding spring. By this time the earlier-pinched laterals will have extended considerably, and may be pinched back in the same progressive way to an eye or two, until the end of August, when it is good practice to stop all late growths as they appear. Some make a point of blinding all the eyes on the laterals

about this time, with the idea of causing all the elaborations from the leaves of the laterals to be appropriated by the principal eyes; and such appears at least a strictly scientific procedure.

Little more remains to be done the first season; and by the end of November the leaves will be all decayed, and *pruning* must be performed. Now the length to which the rods must be pruned is regulated entirely by the strength of the shoot; if they have grown well, the shoot will be three-quarters-of-an-inch in diameter. A roof may be furnished with spurs from bottom to top in two years, and we have known it take four; something, however, depends on the length of the rafters. A three-quarters rod in a good border will thoroughly develope spurs six to eight feet, and that may be the first year's pruning point. Thus, supposing the rafters to be sixteen feet, one half will be furnished with spurs after the first winter's pruning, and the other half after the second; consequently, after the third winter's pruning, the whole rafter will be in full bearing. There are those who boast of a bearing rod the whole length of the rafter after the first year's growth; and the ability to perform this has been impudently made the ground of advertisements for gardener's situations; this, however, is mere clap-trap, or worse still. We hope none of our readers will be misled by such specious nonsense. All good grape-growers know it as an established fact, that premature heavy crops ruin young vines; we have known such require two or three years to rally in. That they *will* bear the whole length of a rafter in the second year is true, but woe to him who is silly enough to attempt it.

Of course, at the first winter's pruning, all laterals will be pruned away, nothing left but the six or eight feet of cane. This, as soon as pruned, should have every knife-wound dressed, in order to prevent bleeding in the ensuing spring; we use white lead. A patch of this on each knife-wound will secure them against this evil. Finally, a clay paint should be applied all over the stems with a painting brush. Beat up clay in water until a paint; then add four good handfuls of sulphur to a gallon of the clay-paint, and some water, in which three ounces of soft soap had been whisked; finally, a couple of handfuls of fresh lime, stirring the whole thoroughly during the application. The vines are now ready for their annual rest, and it must be understood that frost is not essential to them in that state, yet a rather low temperature is beneficial. If they are in a plant-house, a temperature ranging from 35° to 55° until February will suit very well, although 55° will be seldom requisite for the preservation of plants from November to February. If it be necessary to excite them early in March, by all means use fermenting material over the roots outside, if obtainable. Such may be applied one fortnight before any marked advance is permitted in the interior, and a heat of 65° to 75° may be encouraged in the material, until the middle of May. Be it understood, nevertheless, that this mode once begun must be carried out until the middle of May; if this cannot be managed, let it not be commenced. In a succeeding paper we will go through the second year's culture, showing how the spurs are established, and pointing to the rod system.

R. Errington.

(*To be continued.*)

HORTICULTURAL SOCIETY'S SHOW—May 8th.

(*Continued from page* 114.)

Roses.—The roses at this exhibition were magnificently bloomed; the plants were large, most healthy in appearance, and not overstrained with too much training. People may say what they please, but the rose-growers are now as high in the scale of good cultivation as the growers of orchids, or of geraniums, or of azaleas, or of any other plant. Better roses were never seen in the open ground out-of-doors in this country, taking them as a whole, and we have now arrived at a stage in our knowledge of the rose, to warrant us in the belief that old England is not a good rose country after all, and therefore that glass shades or houses must be devoted to all the best sections of them in our climate. Splendid as was the show at this meeting, there was not a single rose there which could come at all near to some Tea-scented roses which were seen three or four years ago in the large conservatory of the Society, and, from that single experiment, it is questionable if even the art of man can produce such large flowers in pots as some of the kinds are capable of doing when planted out in a generous soil, under glass. Ten to one if the hardiest of the hybrid-perpetuals will not be as much improved under glass as the Teas and Bourbons. *Barron Prevost* is the largest of that class, and *Emperor Probus*, a hybrid China, is the next to it; but one of the varieties of *Blairii* was nearly as large at this show. The *Duchess of Sutherland* and *Countess Molle*, not unlike each other, were much upon a par. *William Jesse* and *Chenedole* were also a fix; you could not tell the best of the two, for they were both best; but both of them were surpassed in colour by *General Jacquemont*, which, as a forced flower, is close on the heels of the Giant or *Geant des Batailles*. I was glad to see my favourite bedding rose there, *Fabvier*. *Viscountesse de Cazes* stands at the top of the yellow class yet; but I have seen her flowers in a better state than on this occasion. *Niphetos*, a Tea-scented, is a grand thing—white, and as pure as a virgin. When a little forced, but later in the season, and out-of-doors, there is a tinge of yellow in it. The very same remarks, with a little more of the tender feeling, apply to *Souvenir d' un Ami*, another Tea rose, shaped like the *Malmaison* rose. It would be worth while to put off one's wedding a month or six weeks to get these two roses "to order" from a forcing-gardener. The bridesmaids would have *Niphetos*, and the gentlemen in white kids the *Souvenir d' un Ami*; and then the orange blossom for the happy couple. *Devoniensis*, *Mrs. Bosanquet*, and *Miellez* were never in better bloom. *Triomphe de Luxembourg*, a Tea-rose, not often seen, and in the way of *Bouchere*, was most splendid; but why mention names, one could hardly say which were the best; but there was one rose I never saw before, which pleased me much; it was a double *Gloire de Rosamene*, called *Comte Robinsky*. I think this would make a fine bedder, if the habit is suitable. It comes nearest to *Comte d' Eu*, or to *Grand Capitaine*, and no one can tell to what section either of them belongs. They do not give you the idea of hybrid-perpetuals, and they are too thin, and too much jagged in the leaves to come in under hybrid Bourbons, but *Gloire de Rosamene* gives a good idea of them.

Geraniums or Pelargoniums were not so numerous as I have seen them, but they were in fine condition. *Mont Blanc* is still the best white of them. *Incomparable* and *Magnet* (Turner's), are my two favourites of all that were there. These two are certainly most gorgeous things, and if the dark blotches on the upper petals of both of them could be washed out, they would come very near my own idea of the *ne plus ultra*—a fiery scarlet all over. *Magnet* is, I believe, rather new; at any rate, Mr. Appleby, our great florist, pulled me across the garden by the ear to see it as such, and if he and all the rest of them would but take up colours, instead of being so daft about the form of their things, I could find it in my appetite to dine with them off the roundest dishes and plates in Staffordshire. But no! I dare say they will be giving high distinction to some of the wine-and-water-looking weeds, called *Cinerarias*, which were there in droves; but I protest against anything good that can

be said of such trumpery things. There were only two good ones there, as I said last week; but they were beauties, particularly *Prince Arthur*; everybody ought to grow this one. Gain's *Salamander* is another of the pelargoniums which took my fancy very much; it is a high-coloured one. There was another one called *Marquis of Stafford*, I think, but the name was not very plain, a very fine purplish flower; and another in the same way called Beck's *Purpurea*. The way I judge all these, and every other plant in masses of one family, when I am not judging for prizes, is this: after looking hard at them close in front, I go off as far from them as that all that come very near to each other appear as if they were really one kind, those, therefore, that are really distinct, appear as marked stars on a given ground colour. Now this is exactly the *foundation* of the way that ninety-nine ladies out of a hundred judge flower-beds or flowering-plants on the stages of a show-house, without, perhaps, their being aware of it at all times. When you are puzzled to know the best geranium out of a lot, just try this plan, and my word for it you will see the difference in a moment.

Fancy Geraniums.—*Queen Victoria* is still at the head of the whites in this class, and of that we all ought to be proud. *Reine des Français* follows, with a better red in the back petals. *Aboni* is better than either of them in scarlet and white, and *Fairy Queen* the best of the race shown there that day, and if the front petals of it could be washed by some other fairy, so as to have them clear white, that would be again my *ne plus ultra* for a bedder from the fancy class. I once saw such a flower, and I had it in my hand, and so I had a dry specimen of the yellow geranium from the Cape. The *beauty* is gone, I fear, for my day, and the yellow is, *perhaps*, in England, and *perhaps* not; at any rate, there is more than one yellow kind at the Cape—a good, a better, and the best. Mr. Ayres, a nurseryman at Blackheath, is a very successful raiser of fancy geraniums, and he too had a beauty there, which he called *Miranda*, and he had another seedling from the *Quercifolium* breed, which are all bedders; it was called *Quercifolium roseum*. A seedling exactly like it of my own raising, was the father of *Shrubland Pet*, and the father must go to the wall to make room for the *Pet;* but that is only a figure of speech. If *Quercifolium roseum* has pollen, and I forgot to look, it will be more valuable than the pet *without pollen*, but as a bedder, it must not be mentioned the same day as the *Pet*. Mr. Ayres had the best trained geranium in the garden—a new seedling bedder of the citron-scented tribe, with light flowers. This specimen was perfect—a regular model, that ought to be set up in wax, if only to try and shame the other growers who brought in the fashion of Dutch flat dumps in stays, and all manner of contortions; the shape was a blunt cone, the bottom leaves fell over the pot when the plant was a yard in diameter, if not more, and it was nearly four feet high, and as regular all the way up as a sugar-loaf, but not coming in quite so tapering at the top, which made it all the better. Ladies, and flower-gardeners of the first water, do not fancy any of the fancy geraniums that come black and white, or brown and white in the flower. People said that the *Hero of Surrey* would make a good bedder, and so it will sure enough, but who will look at it? It is of no use planting beds for one's self; for if we did not get admirers for what we do, there would be very few shows like this, or beds like that.

Chinese Azale's.—For the names of these, the reader will please to turn to the account of the May show last year; for to tell the truth, to repeat them, or anything else year after year, gives one the headache. They were as numerous as ever, and of course larger by a year's growth, or rather two years' growth, to those who missed them last year, like me; and there were a few new faces, dwarf plants as round as anything, and as full of bloom as if they were stuck on by hand. One of them called *Glory*, and another called *Perfecta elegans*, I marked down as favourites; and there was one with some of the stamens run into curly little leaves, filling up the eye after the way of *Petunia Devoniensis*. It will make a good marked variety among so many. The flowers of *Glory* are red, and they shine as if they were varnished. *Perfecta elegans* may be conceived by supposing the *Rising Sun* geranium to have lost the black mark; then the two flowers would be very much alike in colour and form. On trying them at a distance to see the most marked sorts, the purplish ones strike you first, and there were three kinds of them, and any of them could be distinctly made out two hundred yards off; they were *Rawsonii*, *Macrantha purpurea*, and *Grandis*. Those, therefore, who think they have too many red ones every year in their conservatories or show-rooms, ought to get those three; for depend upon it, there is nothing tires sooner than looking on a great number of flowers all nearly of the same general tint. If there is any truth in mesmerism, you can prove it at any of these great London shows—stand right in the middle of the great geranium stage, and try to look at them all rather vacantly, without looking at any one of them in particular, the *effect* will soon come on, and unless you be off you will soon be asleep as sound as a drummer. For a shady white, or rather light, there is none better than *Exquisita*. All the pure whites, and the striped ones as *Variegata*, *Iveryana*, and such like, look at a distance all alike, but you cannot get the eye off *Exquisita*, and its leaves mix better with the flowers than any one that was there. Talking of *Variegata*, I saw two new variegated ones stuck in a corner, and I hope I shall never see them again, for of all the frights in this world they were the most sickly.

There were some contributions of *Plants with variegated or curious leaves*, but we had enough about them lately; they were very badly disposed of there. There were twelve *Hydrangeas* in small pots with the largest flower heads I ever saw—all pinkish flowers, and as good in their way as any of the orchids. The *Mimuluses* were infinitely superior to the cinerarias and calceolarias. *Eximius* and *Speciabilis*, from Mr. Gains, of Battersea, were really fine things, and for size and colour what could exceed those shown by Mr. Sims, a nurseryman at Foots Cray, in Kent? There was one called *Star*, which is as good as any.

At this show, in the rooms in Regent-street, and in the large conservatory of the Society, one of the most useful spring flowers we have was conspicious on all hands; I mean *Salvia gesneriflora*. On the conservatory wall it lasted with us from the end of February to the beginning of June. I saw it the year before last coming into bloom early in January, in a heat of 70°, with Mr. Jeffries, at Ipswich, and it did not appear to be the least "drawn" by so much heat, so that this salvia may be had in bloom from Christmas to Midsummer-day. This would be a good time to plant out little plants of it in a good border, as you would the old *Salvia splendens*, or the chrysanthemum; to be taken up at the end of September, for coming into flower early next spring; at any rate, everybody ought to grow it.

Mr. Jackson, of Kingston, had *Vriesia speciosa* there; a very beautiful thing, which took much attention; it had two long flower-spikes like a double-edged sword, the flowers coming out in steps, as it were, all up on both edges, as in *Gladiolus floribundus*. The spike itself was of a rich colour, and the flowers much richer—a crimson. Without the flowers, you would take the plant to be an Æcmæa, with zebra-marked leaves. There was also a little morsel of a zebra-marked-leaf variety of *Aphelandra cristata* (I believe), from Mr. Van Hout, at Ghent. This marking was clear white. This will surely come to be a striking and favourite plant; and he sent

also a leaf and one flower of a cross seedling water-lily—*Nymphæa*. It was said to be between *Dentata* and *Rosea*. The flower was deep rosy, and the leaf dark brown, with darker blotches on it.

The most curious plant at the exhibition was called *Attuccia cristata* on the tally, but it should have been *Ataccia*. It was sent by the Messrs. Rollinson, of Tooting, and they had it, I suppose, from the East Indies, or some of the eastern islands. A gentleman who examined this strange thing with me, declared that it could not be a native of this world at all; that it must be from the kingdom of the *Water kelpies*, wherever that is; but how to describe it I hardly know, as we have nothing like it. The leaves look like those of some Canna or Hedichyum, but quite blunt round the points; they are stalked, and the stalks rise from the roots at once. From the roots rise also the flower-scape, like that of some lilywort, and the flowers are in a bunch at the top, but such flowers I never saw before; they were quite black, and in a cluster like some Hoya. At the back of this cluster were large spreading bracts like the sepals of some Cypripediums, forming what botanists call an involucre, and the way of the flowers they call umbels; then between the umbel and the involucre issued lots of long bodies like air roots, which hung down like so many tails, putting one in mind of the tails hanging to the flowers of *Angræcum caudatum*, and *Cypripedium caudatum*. Presl, a German botanist, was the first who classed such plants, and he called them *Taccads*, or *Taccaceæ*; he also named this genus *Ataccia*, and by others these are arranged between bromelworts and blood-roots. The plant seems easy enough to grow, and it certainly is a great curiosity, and well worth having for its odd looks.

Among the plants shewn for their rarity, without being in flower, I must mention two of great value and extreme rarity. Of one of them we lately gave a figure and biography—*Fitzroya Patagonica*. The other from the same regions is called *Saxe-Gothea conspicua*, after one of the titles of His Royal Highness Prince Albert. The Messrs. Veitch's emporium of great novelties supplied these also. There was another new plant belonging to Irids, and called *Sibertia*, which took my fancy very much; it looks like a large Sisyrinchium, and perhaps is one of them, for it is a very difficult genus to define.

The *Orchids* were never half so fine. The dark weather all through the spring seems to have helped them much, as many of the sorts were "kept back" for weeks so as to be in time for this show, and others were, no doubt, forced in a hurry, but no one could make out; but the whole came out of their own accord, just in time to be seen that day. Their tent was loaded with their fragrance; but, like the *Heaths*, it would lead one into a wilderness to attempt to give their names; besides, Mr. Appleby described the whole of them in these pages already. The new *Ansellia Africana* was there, and we had it in Regent-street early in March, so that it is a lasting bloomer, besides being a good kind. *Phalænopsis grandiflora* was not a shade better than the *Amabile*.

Odontoglossum citrosmum improves every year. The *Dendrobes*, the *Aerides*, the *Saccolabiums*, and the *Cattleyas* the same. *C. Skinnerii* and *Mossiæ* were never seen finer than on this occasion, but they were all splendid, and much admired as usual. In stove plants, the Ixoras, the Clerodendrons, Stephanotis, *Franciscea macrophylla*, *Cyrtoceras multiflorum*, and *Alamanda cathartica*, with *Vriesia speciosa*, and *Medinilla magnifica* already mentioned, were most conspicuous, but almost all the collections were made up of the best greenhouse plants, among which azaleas and heaths are still admitted; but it should not be so, seeing that classes and premiums are set apart for them otherwise. The Eriostemons, Gompholobiums, Epacris, Pultenæas, Pimelias, Polygalas, Chorezemas, Leschenaultias, Aphelexis, Boronias, and such like beauties were in abundance, and in every large collection, and were never seen to better advantage. Even the *Hovea Celsii* is now clothed from top to bottom, and full of flowers, although only a few years back no one could hardly shew it without bare legs and arms. The *Wild Cape Geraniums* were hardly good enough to be seen; indeed, they are not fit for such work; but if the same pains were taken to cross them as is shown in attempts to grow them into specimens, the result would be far otherwise. The grand wedding at Stafford House made a sad hole in the fruit tent, but who would grudge it for such an occasion; and next month we shall have Mr. Errington up to say where the improvements in this quarter are most conspicuous.

D. Beaton.

PITS AND HOUSES.

Those who wish to be gay during the summer will feel the want of these conveniences *now*, by the supply they possess in many cases not coming nearly up to the wished-for demand. Many inquiries connected with the economical and the useful, as respects these structures, have reached us; and as this is the best of all seasons for setting about their construction, I hope to meet a number of cases by a solution of the following questions.

1st. Do you still find earth and turf pits as useful as you have represented them to be? Quite so: and this is a fine season for making them, as the walls will be solid before winter. Turf will enable you to build the walls easier, but earth or clay well rammed will be just as effectual, only you will not be able to have the walls quite so straight without the assistance of some strong wooden posts, and a few rails in addition would be an improvement. These pits answer best when the walls are low, say from 9 to 15 inches high in front, and from 18 inches to 3 feet in height at the back. By making them *now*, the walls will become so solid, that you may easily render them waterproof before winter by a coating of *tar*, as previously recommended. The front wall should especially be done, to prevent the wet soaking in from the drip of sashes, and any other make-shift conveniences. If the ground is raised in front, so as to slope from the top of the wall, and the slope is tarred over, all danger in this respect may be guarded against. Throw some dry road-drift on the tar, and in a few days all will be solid; and another advantage will be, that rats and mice will be hard up before they attempt to go through, or locate themselves near the walls. For greenhouse plants in summer, and being turned then into slight forcing conveniences if so wanted; for preserving a good stock of salads, and the tenderer vegetables in winter; for enabling you to take many things from your greenhouse in spring, when out of bloom; and as a repository at that period for those plants you wish for baskets or beds, by either pricking them out into nice light soil, of which decayed leaves or very rotten dung forms a part, or placing the plants in soil, after mossing them, as lately advised, these pits are truly valuable; and for all these purposes, provided the expense of a good rail was gone to, at back and front for the sashes, or different kinds of covering to rest upon—the best covering being a waterproofed substance—I should prefer them to brick pits.

Whilst on the subject, I may mention that when a few years have to be reckoned on, the cheapest and neatest protecting medium, either with or without glass, are wooden shutters, made of half-inch yellow deal; if to cover glass, the size of the sash, and an edging all round of an inch in depth, so as to enclose a body of air between the glass and the wood covering. This would not be required where wood was the only protecting medium, and no glass used. Some years ago, the proprietor of a

garden, not large, but the very pattern of neatness, got quite disgusted with the *expense* and the *shabbiness* of littery mats for covering his cucumber and melon pits. Such shutters were advised, were made, and painted; they cost somewhere about sixpence each, but in two years, the gardener said, they more than paid the expense they used to be at for mats. With common care, there was no risk of breakage. In frosty and stormy weather, they were as effectual as three or four mats; and unless in very extraordinary weather, no other litter was wanted as covering for the tenderest things. They looked as if they would last a life-time, and yet had been constantly at work; the gardener finding them as useful for salading, &c., in winter, as in protecting his tender plants in spring. We slow coaches may be under the necessity of still using the ragged mats, but no amateur, with an eye to neatness and ultimate economy, could ever patronize them to any extent. As now sold, and their quality considered, I look upon them as one of the most expensive things that find their way into a garden.

2ndly.—"Whether should I build my brick-pit on the surface of the ground, or sink it partly in the ground, so as to keep utility and economy in view?" This is a question that has two sides, and much may be said in favour of each. What a great man said of governments, whether right or wrong, may here be said of pits; the administration—the working out—is the thing. I have glanced at some of the features of the case previously. Where a high temperature is required, the sinking of the pit economises heat. The earth is a much slower conductor of heat than an exposed brick wall; in fact, two or three feet below the surface the earth does not become greatly cooled at all. Hence, if we merely wish to keep out frost, a sunk pit would be more effectual than one raised above the surface; but then disadvantage presents itself in the shape of damp, and, with all your care in foggy weather, this damp, in the shape of various minute *fungi*, will do the work of destruction as effectually as a frost at zero. "As the sunk pit secures the advantage of warmth, is there no means of counteracting the effects of *damp*, and that without a heating apparatus of any kind?" Of course, with a heating medium, a more free and rapid circulation of air may at all times be given; without it these conditions following will act in alleviating the evil of *damping*.

1st. The *bottom* should be rendered *dry*, and kept so by watering in winter, with great care; not spilling a drop. The bottom should be covered with dry ashes and nodules of quick-lime, which will sweeten the atmosphere, and absorb a portion of its moisture. 2nd. The walls should have slate inserted in cement a little above the foundation, to check the rising of damp from beneath; but often the damp will pass in spite of this, though frequently it is effective. Building the walls hollow will be another advantage. 3rd. Keeping the surface ground outside the pit dry. This ground round a pit is generally used as walking ground; it should be highest all round next to the pit, with not less of a fall than 1½ to 2 inches to the foot. This carried out for from three to six feet in width, well hammered down, and rolled, covered with a thin coating of *tar*, and fine gravel thrown over, and rolled again, will free you from all the danger of water soaking down near the walls. 4th. With all this care, if the plants are two or three, or more feet from the surface, the moving or tilting the sashes at every favourable opportunity, while agitating the surface air, will often leave a denser stratum motionless at the bottom, especially in winter. This is one reason why *damp* will commit its ravages in winter, even with sashes tilted back and front; thought of now, when building, will save future trouble. In the front wall, level with the floor-line of the pit, holes should be left from three to six inches in diameter, and each of these connected with a tube of some sort, that rises above the surface-soil in front of the pit, and furnished with a plug that you can open or shut at pleasure. These openings should be left opposite the centre of every second light; if in the centre of each, it would be still more desirable. The opening outside should be furnished with a wire guard, to prevent a rat or mouse tumbling down. Even with pits built on the surface, openings near the base line are extremely useful. "But I did not observe that your pits were so constructed." Very true. But that is no reason why experience should go for nothing, and that in piling brick and mortar together, you should derive no more advantage from doing so than was realised from the same operation many years ago. By opening these front base line ventilators, and tilting your sashes behind, you will obtain a current of air that will prevent *most damps* from gaining a resting place. Besides, the fumes from the quick-lime is not favourable to any of the fungus family. These things attended to, necessary protection will be reduced to its minimum in sunk pits, and danger from *damping* will be next to removed.

On the other hand, for all small tender plants it is best to build shallow pits on the surface of the ground, and protect their sides in winter with some dry material. In the case of tall pits, constructed so as to hold plants from three to five feet in height, it would be a great advantage to build the walls hollow. Without this precaution, no covering of the glass will prevent the inside being unduly cooled by the radiation of heat from the sides, whenever it is very cold weather. For pits of this description, for plants belonging to our province, no banking up of the sides with *fermenting* material ought ever to be attempted. There are two evils attending it —you are apt to heat the wall, and thus forward vegetation within, at the very time when it ought to be stationary. Again, all such material in winter collects and retains damp, and this is absorbed by the walls, and thus you may injure your plants by a medium which you have built your pit above ground to avoid. For protecting such pits at the sides in winter as stand several feet above ground, nothing I have tried surpasses clean wheat straw, tied firmly along in a layer from half-an-inch to one inch in thickness, reaching from the ground to the wall-plate. It will require a *wonderful* rain, and a very *uncommon* frost to penetrate that thickness of hollow tubes of straw. In a pit, high above ground, heated by hot water, and used for forcing purposes, I have found the advantage of resorting to the same plan in the early part of the season. Some friends would have it that much heat could not be lost through a nine-inch brick wall; but getting them to insert their fingers through this thin wall of straw in a cold morning, and to place them in contact with the wall, soon convinced them to the contrary; the covered wall being as comfortable as a warming-pan, while the uncovered part was cold as—I was going to say—charity; and, alas! many who need, find that cold enough. A four-inch wall, with such a covering, is superior to a nine-inch uncovered. A hollow nine-inch, or a hollow fourteen-inch, would also be good, and save trouble of covering. For walls above ground, forming parts of pits for plants, the lesson to be learned, therefore, is to avoid all damp and fermenting material for their sides, when the object is merely to keep them; and in frost, for protecting the sides, I know of nothing better than straw, put on in the beginning of November, and removed in the end of April; anything else, however, would answer equally well, that would repel wet and enclose a body of air. For all *such* low pits, nothing would beat banking the walls up with earth, but not so steep but that you could walk on the slope, and then covering with tar and gravel.

3rdly. "These pits, both above and below ground, cost a good deal for bricks; I mean to heat a structure I am

to build; I want as much room as you have in two of these pits of yours; must I follow your example, or can you recommend something preferable as respects first cost and utility?" Undoubtedly so. Get rid of the two back walls of pits, and turn the glass that would be required for these two pits into a low, span-roofed house. But this must be alluded to again, as my space is occupied. R. Fish.

CONIFERÆ;

OR, CONE-BEARING TREES AND SHRUBS.

There is no tribe of hardy trees so remarkable as the Conifers for elegance of outline, stateliness of figure, and magnitude of growth; and we need only refer to a few examples to prove the assertion in the above, our first sentence of a series of papers we intend to write on this beautiful and useful portion of the vegetable creation.

What can be more graceful than the *Cedrus deodara*, the Sacred Indian Fir, from the Himalayan Mountains, where it flourishes at an elevation of more than 10,000 feet above the level of the sea? Even the most heedless of observers of such lovely objects is delighted with it. Every one that has a Deodar growing on his grass-plot is gratified with its elegance as it advances in growth year after year, displaying its gracefully-drooping branches, its beautiful, light, evergreen foliage. No one ever regrets purchasing one or more of this charming tree. If there are any readers of The Cottage Gardener that have a piece of ground to spare, and have not a specimen of this charming tree, let them procure one, or even a score, if they have space for them, to ornament their "wee bit garden." Such a quantity of seed has been imported into this country by enterprising nurserymen, and successfully cultivated, that plants are within the means of almost every one of the million. Plants a foot high may be had for a couple of shillings. The stateliness of figure of the cone-bearers may be beautifully exemplified by directing attention to that singularly foreign-looking tree, the *Araucaria imbricata*, a Conifer from the mountains of Chili, where it is frequently seen from 100 to 150 feet high. The stem grows perfectly straight; the branches are in whorls around it, horizontally at first, but bending upwards towards the extremities; the foliage is dark green, stiff, thick, and pointed, and the bark is rough, almost like a cork-tree. The whole appearance of this remarkable tree gives an idea of greatness and majesty. Like the preceding example, it is a desirable ornament to the pleasure-ground, however small; but it is peculiarly suitable to be planted in avenues, near to a castellated or baronial residence. The finest example that we know of this noble tree is at Dropmore, the seat of Lady Grenville, near Maidenhead. That tree is at its base as thick as a man's body, and is more than 40 feet high, clothed with branches down to the ground. It gives the spectator a faint idea of what a noble object it will be when three times the magnitude and height it has at present attained. The mind may, when observing this young example of stately appearance, easily imagine what effect an avenue a mile long would have of such majestic trees when at their full size.

It seems "a traveller's tale" to us dwellers in this northern clime, that there are trees, perfectly hardy enough to bear our winter's frosts, that rise to the astonishing height of from 200 to 300 feet.* Yet this is no fable, for it has been satisfactorily proved that the *Taxodium sempervirens*, a native of the hills of California, in a climate more severe in winter than that of Great Britain, has reached there the astounding altitude of 100 yards! How our tallest trees sink into pigmies compared with those giants of the Californian mountains. But that species is not the only one of gigantic proportions, for there is the *Pinus Lambertiana*, growing in the same locality, and reaching to a height of more than 200 feet; and the *Pinus Benthamia* attains the same magnificent altitude. Then the *Picea grandis*, from North California, a tree of a peculiarly handsome habit, attains to more than 150 feet. The late lamented, enterprising, and persevering Mr. Douglass, the botanical collector, said of this remarkably handsome and noble tree—"I spent three weeks in a forest composed of this tree, and day by day could not cease to admire it."

Contrast these magnificent trees with others that we are well acquainted with. The silver fir (*Picea pectinata*), native of central Europe, is perhaps the tallest of European Conifers, yet the greatest altitude it ever reaches is from 100 to 120 feet. The larch (*Larix Europea*) attains from 80 to 100 feet. Of the far-famed Norway spruce fir (*Abies excelsa*), the highest on record reaches 100 feet; and the well-known and truly magnificent *Cedar of Lebanon* seldom exceeds 80 feet; its majestic character being obtained more by its noble spreading branches, and fine mode of growth, than by its great height. Let us, however, not be misunderstood by these instances of contrast. We admire each and every one of this tribe, but not with the same degree of admiration. Where there is space, we would grow them all, planting them in suitable situations, so as to show to the best advantage their several beautiful habits. Yet, from what we know of these Californian, Chilian, and other climes, from whence we are constantly receiving new species, we are desirous to press upon our readers the desirableness of planting them largely in our native land, though the present generation, nor probably the next, may not see those magnificent giants attain the noble stature they do in their native climes, yet there is no doubt they will in the course of time. How changed will then be the appearance of our landscapes; our waste lands, our rocky mountains, useless and barren at present, would then be clothed with evergreen forests. Such a consummation is devoutly to be wished. To aid in leading to such a desirable end is the reason why we have ventured to write upon the subject, and we shall do our best to increase the taste, and awaken and provoke an earnest desire in the owners of large tracts of uncultivated lands to plant largely, even for profit as well as ornament, these noble and useful foreign coniferous trees. We would impress upon the minds of every planter the homely Scotch proverb—"Be aye sticking them in, Jock; they will be aye growing whilst thou art sleeping." Every one who plants one even is doing a truly patriotic deed; for he is doing good to future generations. T. Appleby.

(*To be continued.*)

* The Monument in London is only 202 feet high.

FLORISTS' FLOWERS.

Auricula (*Brunette*).—Your seedling alpine is very good. Truss of six pips, edge of petals dark maroon, with uniform lighter border of the same colour; paste (yellow) of equal breadth with the edge; form good.

Cinerarias (*C. C.*).—Not one of your five seedlings are good. The petals are too scattered, deeply notched, and no novelty of colouring.

Mrs. C. S.—The *Calceolarias* were squeezed flat, we therefore could not judge of their form. Their colouring is not at all new or striking. The seedling *Geranium* is not novel in colour, and the petals are too long and too narrow.

Pansies (*Pansieana*).—*Lady Cardross*, good form and size; colour pinkish-purple, with creamy-white centre. *Hon. Miss J. B. Erskine*, bad form, and very

common-looking; purple, with yellow centre. The blooms arrived in capital order, in a tin box, between disks of cabbage-leaf, cut the size of the box.

CULTURE OF ROSES IN POTS FOR EXHIBITION.

(*Continued from page* 117.)

Winter Treatment.—At the beginning of this season the pruning should be all done; the manner of doing it has been already fully described. Afterwards, the more tender varieties of the China and Tea-scented varieties should be placed under some kind of shelter, not so much from cold as from wet. We have alluded to the injury excessive wet inflicts upon the roots on a former occasion, but we cannot too strongly press upon cultivators the absolute necessity of keeping the soil of roses in pots rather dry during their state of rest. If the roses are in pits, we would advise the setting the pots upon a stratum of clean pebbles; then, if the drainage inside the pots is thoroughly open and free, the water absolutely necessary to keep the soil just moist, if there is any excess accidentally given, will easily escape through the hole at the bottom of the pot, and will sink clean away at once among the gravel. If that article cannot be easily obtained, brick ends, broken to about the size of walnuts, the small sifted out, will form an excellent substitute. Now is the time (early winter), to make any additions that may be thought desirable to add to the stock; pot them, and treat them as described under the head *potting*. It will be necessary to repot most of those that have been grown one year or more in the pots. If any are weak or sickly, discard them at once, and procure fresh plants; they need not be thrown away, but may be planted at once in the open ground, where, if well treated, they will recover health and vigour, and may be taken up, repotted, and grown in pots again. In shifting those that are in good health into larger pots, let the roots be carefully untwisted, and take away part of the old soil; let the stems be cleaned thoroughly from moss, or loose bark, and all the old drainage picked out from amongst the soil and roots; then drain the new pots well, and cover the drainage with some pieces of turf; upon that lay a thin layer of fresh soil, and then place the plant in the pot, spreading out the loosened roots, mixing the soil well amongst them; fill in the soil round the ball, and gradually bring it up to the top of the ball, and cover that about half-an-inch; give the pot a smart stroke or two upon the bench, and the operation is finished. Then place them in the situations they have been brought from, either in a pit, or under some shelter, if they are of the more tender kinds, or plunge them in ashes in a rather sheltered place in the garden. This repotting should be done early in October, but the plants having been in pots previously, they do not need so much care in shading, syringing, &c., as those do that are potted from the nursery rows.

Seasons of Starting.—This point is a most important one. *The rose, more than most other plants, will not bear either sudden or violent changes of temperature.* The sap must be slowly set into movement, therefore, to cause them to bloom in May, which is the month in which roses are generally exhibited the first time in the year, the batch intended for that time should be set to work about the second week in January, by bringing them into the rose-house. A low temperature is proper for the first month or five weeks, the maximum being 45° by day, and 35° by night. A slight increase of water will be necessary during that time. Plenty of air should be given whenever the state of the external atmosphere will allow it. They should also be syringed over head twice or three times a week; this will soften the bark, and set the sap flowing more freely, besides preventing the increase of that fearful enemy, the red spider. Of insects we shall treat more fully by-and-by, but bear in mind, that it is never too soon to apply the various preventives to their increase and depredations. After the first month is over, a small increase of heat may be given. Allow the thermometer to rise to 50° by day, and 40° by night. Water may now be given more liberally, with a dose now and then of liquid manure, much diluted; this treatment should continue for another month or five weeks, shortened or lengthened according to the state of the plants; this will bring them towards the end of March. The buds should then be just visible, and then a farther advance in heat will be desirable; let the maximum be 55° by day, and 45° by night. As the foliage will now be pretty fully developed, the plants will require a proportionate increase of food, in the shape of water and liquid manure. Use the water twice, and the liquid manure once, never giving either till the plants require it, but never let them flag for the want of water. Use the syringe too, freely, at least once a day, remembering that when once the blooms begin to expand, it cannot then be used. If the blooms appear to advance too rapidly for the time of exhibition, means must be used to retard them; the temperature should be gradually lowered, and during bright sun they should be shaded from its exciting power. By thus judiciously raising or lowering the heat, the very day may find the roses in the finest possible condition to be brought to the exhibition table.

For the June exhibition, the first week in March will be time enough to bring the roses in pots into the house; because the increased temperature will bring them on much more quickly than those intended to be in flower in May. If there is only one house, these new comers should be placed in the coolest parts of the house, and brought on as slowly as possible. T. Appleby.

(*To be continued.*)

LETTUCE GROWING.

It is no uncommon thing for a family of distinction, after a tour or sojourn on the Continent, to return home with altered tastes, as well regarding the various kinds of vegetables in use there, as also the way of preparing them for table. Leaving the instructions in the latter department to those deputed to carry such secrets into practice, let us see what can be done to provide one of the principal articles contained in the "famed salads" of the continent—*lettuces*. These are said to attain a degree of perfection abroad, that is not always found here; and though the increased modes of transit of the last few years has rendered many things of continental produce within reach of the million, we yet hope the day is far distant when it will be necessary to send to Holland again for our salads, as we are told was done of yore; and though we have little hopes of successfully competing with the shrewd Dutchman in the quality of this production *at certain seasons*, we believe our chances of obtaining it in tolerable good order the whole year round to be better than his.

Let us see in what way lettuces can be obtained in good order under circumstances not always advantageous; and in so doing, we shall be able to point out what makes the difference between the continental kind and our own. For this purpose, we have only to advert to one of those unalterable laws of nature, which tells us that "the quicker the growth, the more delicate the vegetable." This undeniable law is nowhere better exemplified than in the various kinds of winter and spring cabbage-worts, for which so many names are given, but in all the ruling principle is the same; the shoots produced in a few days in spring are decidedly more tender than those of

which the growth has occupied a considerable part of the autumn and winter. Now, though somewhat modified by circumstances, lettuces follow the same law; a rapid growth produces greater crispness than a slow protracted growth. Hence the superiority of foreign specimens, which, when urged on by the combined influence of unclouded sunshine and sufficient moisture, develope a growth which we can only combat in England by closer attention to the varieties grown. That much has been done to effect this we admit; but that much more may be yet accomplished, we are equally sanguine. There are some imperfections in this vegetable we yet hope to see overcome. Not the least is that tendency many kinds have to run to seed, even in spite of the seedsman's warrant to the contrary; and if we could get a good hardy Brown Coss, with its leaves hooded like some of the White Coss, so as to dispense with any tying, we should have a most desirable acquisition; and we do not doubt but both points may be gained in time, without making those sacrifices in another way which the kinds now assuming these qualifications certainly do.

The culture which we here intimate is intended only for summer lettuce; and as we have said a rapid growth ensures delicacy of texture (rather than tenderness of habit), we urge on our readers to sow their summer crops on the best ground they have at disposal; and another thing is to sow it where the lettuces have to remain, as everything in the shape of a check has likewise a tendency to cause it to run, on the same principle that a similar check has the effect of throwing pines into fruit. We say, avoid such changes. Another point is to sow on rich ground, and if in the south of England, not too dry; where the garden consists of that dry, burning kind of soil, which three or four days of sunshine scorch up at any time, sow under the shade of a wall, not trees,—the evil effects of the latter are more than the good they render. We therefore say, sow in some moist, rich situation, in rows about fifteen inches apart, and be sure to thin them out in time, and the chances are in favour of your obtaining good useful lettuces, even when sowing and transplanting in the ordinary way may have failed.

For the reasons detailed above, rich ground is indispensable, both as a preventive to the plants running to seed, as also to promote their quick and luxuriant growth, whereby crispness and good flavour are obtained; and if it be naturally dry, a good watering, and slight covering with litter between the rows, will be of service.

Great attention must be paid to have the best varieties; for however good the ground, and skilful the treatment, the result will not be satisfactory if the breed be bad. The cabbage kinds are less likely to run than the coss, but they are not in such general esteem for salad purposes; the best being the *White Coss*, of which there are many varieties, or we should have said names, as their only difference often lies in the title by which they are known. Some, however, are more hooded in the leaf than others, while some have black seeds, and others white; the former is said to be the best. The *Brown Coss* is also good when true, and the *Bath*, which forms a connecting link between this and the *Green Coss* varieties, is also good at times. It is better not to depend entirely on one kind, unless by previous experience you have proof of its utility. The cabbage kinds, as we have said, are less likely than any others, and the *Drumhead* is generally better than the *Malta;* but they are all liable to fluctuations. One thing we impress on the amateur, to thin his crop in time, and if the weather be at all favourable he may plant a few out as well. In many instances they do equally well as those left where sown, but where the ground is dry, and a hot season follows, sowing where they are to remain seems the only plan to secure a crop with anything like certainty.

Sundries.—Sow more *Brocoli* of the Cape, Walcheren, and Grainger's White, and examine those previously sown, to see that nothing molests them. Sow a few *Onions*, to draw young when such are wanted for salading, &c. Another crop of *French Beans* may also be planted, and the same may be said of *Broad Beans* and *Scarlet Runners*, and sticks put to the forwardest of the latter. Sow *Peas* also, and *Spinach, small salading*, and it may be a few more *Turnips*. It is, however, too late now to sow *Radishes*, except on cool ground, or on a north border, but even then they are apt to get hot and sticky in warm weather. Plant out *Capsicums* against a south wall which cannot be accommodated with glass anywhere, and as soon as the *Celery* in the seed-bed has got two or three rough leaves, and is otherwise firm and stiff, let a quantity be pricked out on some well-prepared bed. The plants will improve much quicker than if left until drawn in the seed-bed. *Melons* and *Cucumbers* attend to as heretofore. It is better to put in a few seeds of the former at various intervals, in order to furnish any frames that become vacant. We have sown as late as the beginning of July, and ripened fruit of them; stop and otherwise attend to those in bearing, and if very bright sunshine occur, and the plants be so close to the glass as to touch, and the quantity of atmospheric air inside the frame or pit be very limited, a slight shading may be necessary, and, what is equally important, particular care taken that air be admitted in due time, and in sufficient quantities; a little neglect that way, in such a close confined place, overheats it, which, exciting the plants too much, leaves them more than ever exposed to those misfortunes so fatal to the melon. Water must be more liberally administered, and every other mode adopted calculated to ensure that robust health (not gross luxuriance) which in the melon, as well as other things, is the only security of their well-doing.

J. Robson.

A LESSON FOR THE SICK.

By the Authoress of "My Flowers," &c.

I have already, I believe, observed upon the patient and quiet way in which the poor generally endure the trials of poverty and sickness that very often come upon them; but another instance struck me so forcibly, a few weeks ago, that I cannot forbear touching upon the subject again, because it is one which will benefit every class, and reconcile those to their trials who possess larger shares of this world's good, and yet are sometimes tempted to murmur when they cannot obtain every thing that they fancy would do them good.

We were told that a poor man was ill, who lived at a short distance from us, and we went to see him. His cottage stood in a beautiful situation, just at the outskirt of an extensive larch plantation, on rather high ground, overlooking a beautiful valley, with a fine sweep of green hills on the opposite side, and a rich scene of woodland loveliness wherever the eye rested. It was the Sabbath evening, too, and all but the joyous songs of the birds was calm and still. An air of comfortlessness always surrounds that cottage; there is a broken wicket, a deep, black, muddy ditch close to the house—enough in itself to cause a fever—an untidy garden, and a neglected, wretched look about the place, which says a great deal about *the wife* who dwells within. In fact it can scarcely say too much. We opened the door, and found poor M—— and his family sitting together, but such a picture of domestic bliss will scarcely be imagined by many of my readers. It was very cold, with the cutting easterly wind whistling through the trees, but there was no fire on the hearth. M—— was sitting in a straight-backed, rickety chair, close to the fire-place, where the embers were gone out, after the kettle had boiled for tea, and a little cracked teapot was placed among them to be kept warm. The house was very dirty and untidy; the table was still covered with the tea-things, and a piece of a loaf, and a small bit of lard in a plate, stood upon it. The wife sat beside this tea-table opposite her husband, a dirty

little child was near her, and an infant was crying in the cradle. Poor M—— sat in the midst of this discomfort, the image of contented suffering. He was very clean and neat, as usual; but his face expressed so much acute pain, that it was distressing to look at him. A large boil was forming on his back, the pain of which was extremely great, and he had much fever and weariness of body too. But he said nothing about it, and made no complaint. A cup of pale liquid, which they called tea, stood before him, and a thick piece of hard toast with a scrape of lard upon it. It was impossible to sit in a scene like this and not learn a lesson. How good would it be for every one to enter such dwellings, and observe all that is there, and all that is *not* there too! When *we* are racked with pain, and our bodies exhausted with want of rest and appetite, how we should turn from the cup of water just coloured with tea, and no milk in it, and from the clumsy toast, that formed poor M——'s only meal! True: the poor are not accustomed to dainties; they are brought up to relish coarse and humble fare; but we all know how fanciful the appetite is in sickness, and how we dislike the soft and delicate bread-and-butter to which we have sat down with pleasure in the day of health. Even meat, poultry, fish, jelly, and all nice things do not please us always when we are ill; but do we sit with the same contented spirit that the poor man sits? M—— could not relish his tasteless tea, and hard, thick toast, but he sat meekly and contentedly under his privations, and never seemed to think of wanting any thing else. How reviving to a faint and exhausted frame is a cup of nicely made gruel, or a little simple mutton or veal broth. How the eye brightens, and the spirits rise, as it is sipped with the relish of a stomach longing for something warm and comfortable. Even a little soft, sweet biscuit is a luxury to the sick when they can obtain nothing but bread; and how many of us, how *very* many of us, who can do nothing *great* for our neighbours, who cannot stand forth as helpers in a general way, may yet be able to give these little simple things to such as are sick and destitute. It is a work of joy; and the pleasure of seeing the relief afforded by the most trifling assistance of this nature is abundant payment to the giver.

Poor M—— was for many days in extreme suffering; he could neither lie, nor sit, nor stand, so as to get ease. For hours he would lean over a table, or stand bent down, resting upon a stick, but all the time so quiet, so patient, and so thankful for whatever was done for him. His poor, little, dirty wife sat looking at him, in a high-crowned cap, but she was so helpless and unthrifty at all times, that she had no notion of making him or the house in any way comfortable; so there he remained, poor fellow, until the boil was in a fit state to be lanced, and then relief was speedily obtained. We were standing one morning watching our workman, when a man walked rapidly up to us, which proved to be M—— himself, on his way to the doctor, quite another person, and looking almost well. He quickly gained strength, and is now at work again; happy, no doubt, to get away from the dirty, dreary kitchen where he passed so many days.

We are told, on the best authority, that "It is better to go to the house of mourning, than to go to the house of feasting; for that is the end of all men; and the living will lay it to his heart." But there is another reason why the house of mourning among *the poor* is wholesome to the living. It instructs us as to the blessings the Lord has given us, and calls loudly upon us for gratitude and praise. It makes us contented; nay, it makes us thankful and *adoring* for the many mercies we possess which our poor brethren have not; and it tells us that all our good things may be of yet more value and blessing *to us*, by being used and distributed for the good of others. Never mind present reward; never mind the evil that sometimes is returned for good; let us hear *The Word:* "Charge them that are rich in this world . . . that they do good, that they be rich in good works, ready to distribute, willing to communicate;" it is *this* with which we have to do, "according to our several ability;" remembering at the same time that we shall be judged according to that which we have, and not according to that we have not. There are few that cannot give something or do something for those who are poorer still; and if we strive to be faithful stewards to our Master in Heaven, we shall be surprised to find how much "meat" we shall have to give to our fellow-servants "in due season"—meat temporal, *and* meat *spiritual*. Let us take a lesson from our poor suffering brethren; let our wants and desires be few; let us be satisfied with such things as we have, however few and lowly; let us take evil as well as good from our Father's hand, with heartfelt thanks; it is medicine, if it is not oil and wine, and meant to do us, perhaps, much greater good. Let us go to the *cottages* of mourning, for there we shall learn the deepest lessons, and receive most benefit to our own souls.

ALLOTMENT FARMING.—June.

Doubtless, the fearful drought which most of the kingdom experienced during March and April has had the effect of throwing many of the allotment crops somewhat out of time, and of causing serious blanks in others. It has been a capital convincer, we should think, of the propriety and soundness of a practice we have often recommended—that of watering drills copiously before the seed is committed. This practice has been carried out with most of the crops in these gardens during the present spring, accompanied by a six or eight hours' steeping; and we have to observe, that never, during thirty years experience, have we had such excellent crops of every kind, not only as to seeds vegetating safely, but as to the character and condition of the crops. Deep digging, or, indeed, trenching, has been practised on at least an acre per year for the last four years, and this it is which accounts for the exuberance of the crops, their freedom from insects, canker, club, and other evils to which very old gardens are so peculiarly liable.

This, however, is not the condition of the majority of gardens, we fear; and it becomes those who have suffered losses to "cast about" and see what can be done in a timely way to repair the damages. The most eligible, and it may be added profitable crops, for such purposes, are, first of all, Swede turnips, and secondly, cabbages, or other greens. These are by far most generally useful. Other things may be added, however, such as lettuces, or the common turnip, the first transplanted, the second sown to remain; but we do not advise them at this season. The occurrence of gaps points to the propriety of securing, as advised in these pages, good seed-beds of Swedes, and the greens;—thus equipped, the allotment man and the cottager may face a capricious summer.

Root Crops.—So much in detail was said in our May advices that repetition here would be tiresome. The singling out, &c., must be proceeded with in due time, and all weeds extirpated. The hoe should be run through all crusty soils betimes, taking them between moist and dry, in order the better to crush the lumps for soiling purposes, as also on general or airing principles. We would in most cases follow the hoe with the fork—the latter when the plants are established, and the weeding and thinning completed, and this will be in the end of the month, or the beginning of July. It has been remarked before, that such will break off a disposition to side-roots in the tap-rooted class; and its benefits as a sort of fallow will be considerable, easily seen on the succeeding crop. We do not by any means advise transplanting mangold, although we have known it successful; it is by far better to trust to the Swede, which, if grown to a small bulb before transplanted, will withstand all the vicissitudes of an indifferent season. We will say more on this head in the sequel. In the culture of root crops in general, it is not advisable to use the hoe much between plant and plant *in the row;* we have known good crops seriously stagnated by over officiousness in this respect, destroying abundance of useful fibres.

With us there is little doubt that, strange as it may seem, the mildew is at times engendered by a sweeping destruction of fibres, succeeded by sudden droughts. Stagnation of some kind is in nearly all cases the origin of mildew. After one good hoeing *between* the plants, rather work deep *between the rows.* This is the best policy.

Potatoes.—Deep culture between the rows is of great service. This is best performed when the potatoes are about nine inches high, and may follow on the heels of what is termed soiling up the stems. We know some clever persons who entirely reject all soiling; but although their opinions are en-

titled to high consideration, and although, too, it is possible that a greater weight may be obtained without this process, yet we feel bound to advocate it, having tried both practices for years. We never could produce good eating potatoes without it—always some green, or discoloured, and, it need scarcely be added, bitter to the palate. We Northerns, however, must not go to the south to learn either potato culture or cooking; we will back for a smart sum Cheshire potatoes by a Cheshire housewife, against London potatoes by Monsieur Soyer. Potatoes, then, by our practice, are first hoed carefully when fairly through the soil; then, in about a fortnight, or more, soiled carefully; if in drills, and the ground light, the soil so drawn as to leave a hollow for the rains, in form like the dip of a saddle. They are then left untouched for three weeks, when we go through and carefully hand-weed, and then, as soon as dry, fork deep between the rows, and thus ends their culture. Towards the end of the month the very early kinds will be ripening in some parts, and will soon make way for some winter or autumn crop. Let it be remembered, that not a day should be lost in providing a successor.

Swedes in Seed-bed.—We may here repeat that Swedes for planting-out in July and August are by far best if they have a bulb as large as a moderate hen's egg. They will both endure drought better, and make larger bulbs. But, to effect this, they should be sown in drills six to eight inches apart, and receive a slight thinning, as to regularity, in the drills. On this attention, and weeding, depends the quality of the plants. We do hope our readers will try the difference between such, and young and spongy plants drawn from a thick seed-bed, on the broad-cast system. The middle of May sowings are quite soon enough to succeed early summer crops.

Cabbages and other Greens.—These "Cabbage-worts," the most popular title now for all those useful greens, termed by learned people Brassicas, are of much importance, whether as primary or secondary crops, more especially as the latter. We do not advocate so crowding crops in a mixed state as that the foot cannot be placed between them, but we do know that a "cute" allotment man will get more in a small space, by rightly timing his matters, than one who possesses but one idea—one who is ever prone to mock attempted advances on the least failure. We have seen men who could better afford to pay five pounds for an acre of land, than others could one pound. Such men, however, do not stand with folded arms mocking the "movement" men, they freely exercise both brain and sinew; and, indeed, must soon form the majority in society, or thousands must go to the wall.

These Cabbage-worts, then, comprehending, as far as the cottager is concerned, our ordinary cabbages, the green kale, savoys, Brussels sprouts, and the kohl-rabi, having been sown (as advised) in little drills in the end of April, will come in admirably for insertion in any spare plot. Now, in order to make them profitable, the cropper must possess decision of character—a *timely* decision—a prudent forecast. We have many a time turned existing crops slightly on one side, with a very trifling amount of injury, in order to introduce some Cabbage-worts. The green kale is first on the list for profit and hardihood, but the Brussels sprouts and the kohl-rabi are profitable things, where hares or rabbits do not come, and the savoys for an autumn crop.

Club-Root.—No success in cabbage growing can be where this prevails. Let us advise those who honour us with their confidence, to try one of our mixtures as preventive. We always succeed. Can you obtain any burnt weeds, sticks, old tan, leaves, or other vegetable matter? Is there any brick-making in your neighbourhood? Is anybody pulling down old buildings? Now any one, or what is much better, two or three of these blended, will, as far as our experience goes, prevent the "club." We mix all three, add some soot, and after blending these thoroughly, get some "maiden" soil, a generous subsoil will do, and mix with the former. In planting, we bore holes with a very thick dibble, then, from a handy basket, shake each hole full; and finally, the plants having been "puddled" in slush, we insert them in each hole with an ordinary dibble. If any one permits that bugbear—trouble—to deter him from trying to rid himself of this sad pest, we can only say that he is not only in a slough of despond, but very likely to remain there. We earnestly recommend this practice to the attention of the vigilant.

Watering.—If any friend of ours was going to a distant colony, where tall people's shadows are very short in the daytime, and requested one good recipe for seed-sowing and transplanting, we should write thus:—"Always water well your ground *before* sowing and planting."

Filling Gaps.—By the end of June, or the early part of July, it will be time to think of this procedure, and we repeat it, the more to impress it on the memory. Let the ground be clean weeded previously, and rather wait a week or so for moisture than plant because it is the time in the almanac.

We really meant to have chatted about cows and pigs, but the vegetables have triumphed. One more root may be named—

The Horn Carrot.—We always sow a bed of this nice root in the last week of May, or the first week of June. These are in drawing all through August, September, October, and November, thus keeping back the *true winter's stores.* If any will try, let him use the mixture recommended for "club."

Coleworts.—Those who want nice young cabbages through November and December must sow in the last week of June.

Lettuces.—Their sowing may be resumed by the allotment man in the last week.

And now, as the farmers say, "God speed the plough," so we say, God speed the spade, the hoe, and the fork! All honour to those who persevere—profit and content *must* follow close to their heels; that is to say, if they possess ingenious minds. A diligent, regular, and earnest workman is almost sure to be a blessing both to his own family and to society at large. R. Errington.

THE APIARIAN'S CALENDAR.—June.

By J. H. Payne, Esq., Author of "The Bee-keeper's Guide."

It will now be time to place *glasses* or *small hives* upon such stocks as are not intended to swarm, and it will be well not to do it until the bees begin to show evident signs of want of room, for then they will ascend immediately into the glasses, and commence working; but on the contrary, when they are put on too early, that is, before the stock-hives are full with bees, they will not go into them, but frequently swarm in preference, and besides, opening the hive to put on the glass before it is full with bees causes a circulation of cold air through its centre, which tends greatly to retard the hatching of the brood.

Guide-combs.—A glass should never be put on without having a piece or two of guide-comb placed at the top, which may very easily be effected by first warming the zinc tube, and then attaching the comb to it whilst in that state.

Glasses.—For the method of placing glasses, small hives, &c., on the improved cottage hive, see The Cottage Gardener, volume 2, page 41, and for the treatment of swarms generally, taking honey, expelling the bees from the glasses, &c., see page 104 of the same volume.

Drone Bees.—I have been watching for drone bees very closely for some days past, but have not yet seen any; however, within a few days I am hoping to do so at some of my strongest and forwardest stocks, but from the late cold and very ungenial weather, the hatching of brood must have been very much checked.

Queen Wasps.—In this locality I have seen more queen wasps than usual, and have captured a larger number than I ever remember to have done in any spring before. I find a "Reed's syringe" a very useful instrument for the purpose, for by discharging it at them when they alight, it is sure to bring them to the ground, when the foot may easily be put upon them. It is important to every apiarian and gardener, but more especially the former, to destroy all they can at this season.

Early Breeding.—Many plans have been adopted this season, at my suggestion, to effect this very desirable object, and none, I am happy to say, entirely without success, but variously, according to the means used. The hives that have been simply bound with hay-bands are certainly earlier than those that have not, but those that have been covered with loose sacking and then bound tightly round with oil-cloth (so that when the coverings were taken off for a few

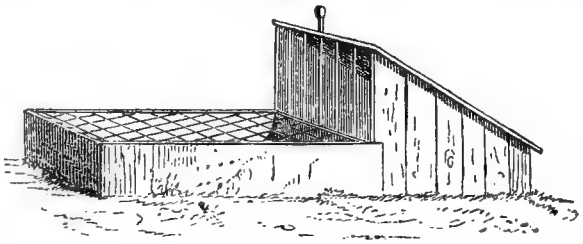
minutes the outside of the hive felt quite warm), are earlier still, whilst those placed in a greenhouse are earlier than either, but the *earliest* are those covered with *fermenting stable litter*—yes, literally placed in the centre of a *hotbed*, leaving only a passage for the ingress and egress of the bees; drone bees have been seen issuing from this hive for some time past, and a swarm is now (May 12th) looked for from it daily.

PHEASANTS.

Let me offer a few preliminary directions for the construction of hen-coops, with remarks for the further benefit of my readers; and although not *strictly* bearing upon the matter of pheasants, they are, notwithstanding, more or less blended with it. I have a double object in thus descanting, for whenever I throw a stone, I consider it reasonable to hit two birds if one can.

The observations may be taken as generally applicable to poultry: hints, by the way, for all persons who possess choice and valuable breeds of the latter; whereby that very disagreeable feeling disappointment, may, I almost venture to say, be allowed to turn on the pivot of success, by adopting a method deducible from the management I am about to point out relative to the former.

No. 1 is a coop combining nearly, if not entirely, all that

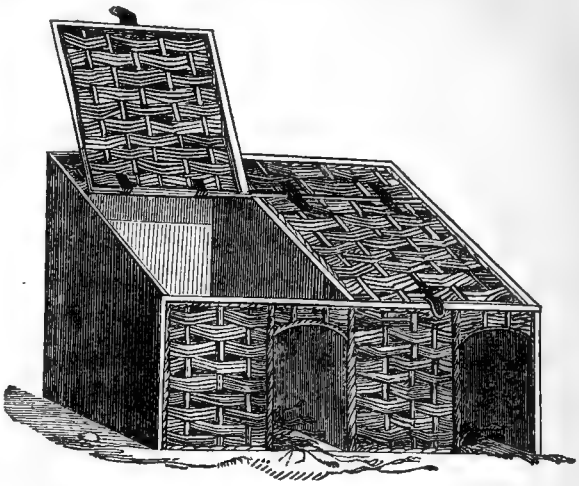


Roofed part, 2 feet square, 1½ foot high in front; 9 inches high behind. *Latticed part*, 4 feet long, 2 feet wide, 1 foot high.

is recommendable for the safe housing and protecting pheasants in their young and tender state; it almost speaks for itself, but I shall have something further to state about it anon.

A fatting-coop for fatting, by consequence of the bountiful, though not extravagant, system of feeding we resort to, I am compelled to own is a needless structure, for those fowls which we *do not* put up to fatten, are in the majority of instances quite as well up in condition when killed, as those which we *do*. I will in passing just offer a consideration for those who have extensive premises, and allow their half-starved poultry to exercise the flesh off their bodies through a false economy, and insisting upon their seeking for themselves a precarious and uncertain means of subsistence, to be varied probably, at last, by an extravagant, unnatural method of feeding and cramming. Would not those fowls which are allowed a sufficiency of corn food at stated intervals, with green vegetation, and clean water at pleasure, be quite equal in condition, juiciness, and more natural-flavoured, subject to no more expense in the sequel, nor so much trouble, and far less liable to disease, than those of their fasting or feasting compeers?

With a *feeling* towards the poor dumb creatures, and an eye to their appearance and contentment, I have my reasons for giving the latter mode of proceeding a preference. Although a fatting-coop is given up in our arrangements as a fatting-coop, yet some such a structure is indispensable in our arrangement, and serves admirably to confine those fowls intended for the table; they are taken from their roost in the evening, and placed here fasting until the following afternoon, when their dread sentence is carried into execution. It is otherwise very often tenanted by some enterprising hen, when *she* does, and *we* do not, want her to undertake the responsibilities attendant upon rearing a family; by thus placing her in durance, she forgets the affair in a few days, and altogether, so far as one's feelings are concerned, she is in the meantime made comfortable, whatever *her* private reflections may be to the contrary, notwithstanding.



23 inches square; height in front 1 foot; height behind 1½ foot; partition boards ¾ of an inch thick; height of door 8½ inches, breadth 5½ inches.*

No. 2 are laying and setting boxes—commend me to them; we have used most contrivances in this way, but never found any to answer so completely as these, the hens take to them, and we require no better judgment than that. I believe they are a wrinkle for this article, and The Cottage Gardener to say, go forth! An auger, a saw, a bill-hook, a clasp-knife, a stout piece of leather for hinges, some iron tacks, a few poles two inches diameter, cut fresh from the water willow, some strips, and a few seasoned pieces of larch, or any other boards, are all the implements and material I made use of in their construction. Rive the willow rods into laths two-eighths-of-an-inch thick, wattle them on the frame as per drawing. Why I give the preference to these wattled boxes, in lieu of those formed of solid boards, is by reason of the constant circulation of air going on through the interstices. This has a great deal more to do with the health and comfort of the hens, and the prospective "counting of the chickens before they are hatched," than a great many people are aware of. In nine cases out of ten, sitting-boxes are too *hot*, *close*, and *dry*. Draw a comparison between them and the stolen, or, if you will, more natural nest in the open air—which of the two are notorious for producing a numerous and healthy offspring?

The pheasantry or *hen-house door*, is an important part of the structure. It should have an open trellis or wire-work window formed in the face of it, with a shutter hinged on just below, to be turned up and secured by a button in front of the opening at night, when cold winds or frosty weather prevail; another opening to match should be situated in the south or west wall, in order to ensure a free circulation of air when the weather is warm. At the bottom of the door is the fowls' entrance, with a slide, to be closed, if desirable, at night, as a guard against foxes or other vermin. No pheasantry or hen-house door should be without this very necessary appendage—its uses are legion.

Most people understand what is meant by *a crate;* something of the sort will be found very convenient inverted in the hen-yard, to allow the young growing chicks to run under when they are fed, out of the way of the elder poultry, who, without there is a protection of this sort, are too apt to become monopolisers; besides, a frequency and better description of food generally come to the share of the younger progeny, therefore a device similar to this saves food, anxiety, time, and trouble.

The area of our pheasantry measured 32 feet by 16, partitioned off longitudinally, and across; the front parallel was at its outermost flank and ends enclosed by an oak skeleton frame, and a four-inch skirting-board for a base, with wire-work attached, fashioned by a hexagonal or six-sided mesh two inches diameter, and a strong tar-cord netting, the same diameter in the mesh, strained over for a top. The pheasants are apt to injure themselves by flying

[* This doorway is large enough for pheasants, but for Cochin-China fowls they should be 1 foot high, and 9 inches wide.—Ed. C. G.]

against *wire* placed in this position. An upright, with horizontal perches crossing at right angles, was placed in the centre of each division, upon which the birds preferred to roost at night in the summer time.

This front surface was turf, though, as may be imagined, it became at times very bare of verdure, but a constant supply of sods, turfy ant-heaps, lettuces, and spare fruits, blackberries, acorns, and so forth in summer, apples in winter, with clean fresh water, was *sure* to be there. The other half—which I will call the house, for distinction—was in fact a substantial stone-built structure, consisting of two comfortable little rooms, with the ground for a floor, or more literally speaking, dry and rather fine *loose* gravel, three inches deep, renewed occasionally. The roof was covered in with Broseley tiles; it was sloping, lath-and-plastered underneath, with a gutter running the length of the eaves to carry off the drip; the foundation of the structure also was laid perfectly dry. Round perches an inch in diameter were fixed across, alternating three feet and five feet from the ground, and about two feet apart; by placing them thus the birds do not soil each other, the lower perches offer an easier access for the young, and also a facility for the old birds to reach the higher roosts; a small ladder sloping to the high perches was also there.

Two doors, one to each compartment, situated in the back wall, formed an entrance, and four wire doors, measuring three feet by two feet, placed equi-distant in the front wall, served the same purpose for the birds, thus offering them a free ingress or egress to and from their inner compartments. In very severe weather these doors were closed, and the pheasants made to remain under cover.

A slide entrance, the same as that described for the door, was formed through the bottom of the partition-wall that divided the inside.

A thorough cleaning-out of the pheasantry took place once a week, or oftener if found necessary, and the inner compartments underwent a lime-washing annually.

The pheasantry unavoidably inclined to an eastern aspect; south-south-by-east would have been better. Ivy covered the outward walls.

When the pheasants with the wire-work were disposed of, the remaining part became converted into a hen-house, and a capital hen-house it was, the trifling alterations required being a *firm* gravel floor, with the laying-boxes represented above, ranged against the back and bottom of the wall in one division, and the perches occupying the other.—Upwards and Onwards.

(*To be continued.*)

OBTAINING THE LARGEST AMOUNT OF HONEY.

I beg to tender to your correspondent, "A Country Vicar," my very sincere thanks for his late valuable contribution to your columns. His plan of managing bees is most clever and ingenious, and looks as though it would prove extremely effectual *to its peculiar end.* That end, to quote his own words, is "to obtain the largest amount of honey in any one year from a colony of bees, with the smallest amount of injury to the hive." He has taken it for granted that I should solve his problem in a different manner to himself—he advocating the non-swarming, I the swarming system. Now, without objecting to the correctness of his conclusions, I proceed to make a few observations on the relative merits of the two systems. To obtain the greatest quantity of honey in *any single season* from any given stock, undoubtedly the best way to proceed is to prevent its throwing off a swarm, and to give the bees as much additional room as they may seem to require. But where the *prospective well-being* of any stock, or stocks, is aimed at, *as well as* a good honey harvest, then I maintain that a systematic adherence to the purely deprivation, or non-swarming, system (be it the most perfect in the world), though it may prove astonishingly profitable now and then, will, in the long run, be far outstripped by that modification of the swarming system, judiciously managed, which I advocate; whose extreme simplicity, moreover, and adaptation to the often imperfect intelligence of our rustic poor, is not its least valuable recommendation. If your correspondent will turn to pages 129 and 130 of my book, he will there find my objection to the depriving-system stated to be, that it "is not so universally successful as its advocates would have us believe. For two or three years, indeed, after the establishment of a bee-house, or of any individual colony, matters may go on well enough; but, if all swarming be prevented, it becomes a mere chance whether it shall succeed or fail afterwards." The fact is, swarming is the *safety-valve*, if I may "fetch" a metaphor from "far," of bee-management: with the very term is associated in the mind the idea of *revivification*, as well as of reproduction. Those, therefore, who systematically repress this admirable provision of nature, cannot, I am persuaded, but often meet with disappointment in the management of their bees. I have lately been called upon to sympathise with no less than four of my neighbours, whose large and, in the case of two of them, highly productive apiaries, managed on the non-swarming system, have altogether, though gradually, failed. Their owners "failed from want of foresight; they should have provided a remedy against the natural defects of the system," by letting each stock so managed swarm *once at least every three years*, or by abstracting the queen from the hive sometime in July, and compelling the bees to rear another in her place. Were this rule strictly attended to, all serious objection to the depriving-system would be much diminished;* for if this were thus judiciously and scientifically managed, together with a periodical cutting-out of comb, I see no reason why an apiary should not maintain a perpetual youth, and any one colony flourish to an indefinite period." "A Country Vicar" will perceive from this that I am perfectly aware of the uses and advantages of the deprivation, *i. e.* non-swarming, system, under some circumstances, provided only its natural defects be supplied. Yet if, in my book and elsewhere, I have preferred my peculiar swarming system, it has not been merely from the too agreeable temptation of a partiality for my own discoveries, but from a persuasion, founded on facts which have come under my immediate notice, that it is really the simplest, most manageable, and most profitable that has yet been recommended to the attention of bee-keepers. I am here alluding to my *cottage* system alone: that modification of it which I have in a separate chapter recommended to the intelligent and practised *amateur*, requiring as it does some considerable nicety and skill in conducting it, I do not take into consideration here.

Your correspondent has further ventured on a remark which also requires some notice at my hands. So far as relates to the *swarm*, my system, he says, "is well," but his experience does not tally with mine "about the more *prolific* character of the older stocks." Does he mean here that the "older stocks" of the old system of single-hiving, according to his observation, are not in general *more* (if they are even *so*) prolific as reserved swarms? If so, I perfectly agree with him. But I cannot think he has yet had experience enough to say of *my large breeding hives*, which are allowed to swarm but *once a year*, and which consequently are *never weakened by over-swarming*, and moreover are presided over by the *first-born*, and, therefore, *best developed* of the royal brood, to say of *them* that they are not *in general* equally, if not *more*, prolific than the swarms which may have an aged queen! At all events, this objection attaches equally to the deprivation system which he advocates; for *there* are no swarms at all, but always *old hives*. There is but one reasonable objection which might be advanced against the systematic reservation of old stocks in preference to swarms, viz., that the comb of the one is fresh and clean, while that

* There is, however, yet one objection to this system, which I will propose in the following words:—To get *very pure* honey, to any extent, deposited in *supers, glasses, or side-boxes*, your breeding-hive must not be very large, else will the bees lay up the major part of their stores in the hive itself, beyond the reach of the bee-owner; and yet, if the hives are small, a less quantity of honey will be collected, because of the less population capable of being bred in them than in large hives. Now does not my method of management exactly meet this difficulty? My breeding hives being large, afford room in the breeding season for the hatching of a most abundant population, which, migrating from the hive, naturally or compulsorily, just at the time when honey abounds, is located in a *small* hive, to which is superadded another of similar or larger dimensions, as soon as the bees have fairly begun to work in the lower hive. Here, then, I get the advantage of an unusually large population, and the benefit withal of a small stock-hive, by which I not only secure a proportionably extensive collection of honey, but also obtain the greater part of that in its purest form. The parent hive, in the meanwhile, gets a new queen, &c.

of the other, after a year or two, gets black and filthy, from the accumulated *exuviæ* of successive occupants, so as to be often unfit for breeding-bees. But have, then, the standard bee-authorities taught in vain—as De Gelieu, Bonner, Bevan, Payne, and Taylor? Is there not an easy remedy—a whiff of tobacco, or the borrowed confidence of a bee-dress; a sharp knife; a practised hand; a comb or two to be cut out in February or October? "*Where the will is, there the way is,*" is a motto always truer than is sometimes defensible the acting in accordance with its spirit.—A Country Curate. *May 3rd*, 1852.

THE VICAR'S BLACKBIRDS.

ἔκλυον φωναν, ἔκλυον δε βοαν
τας δυστανου.—Eurip. Med. 131.

(I heard the voice; yea, I heard the wail of the unhappy.)

"You must know that I am rather given to brick and mortar, and to planting a tree or two—on a very small scale. Shelter on this N.E. coast is my ostensible, a feed for my pony (my wife says), is my real object. But something more, and very gratifying to me, followed these improvements. My shrubs and shelter assembled around me, and I was charmed to behold a concourse, absolutely a rush, of the feathered world.

"A thatched and ivy-clad shed, of which I was the sole architect and builder, was intended and used for some years as my own lady-bird's bee-house. In the compartment around this shed in my kitchen-garden, were the well-manured asparagus beds and hotbeds of the olden style. Birds insectivorous, especially redbreasts, blackbirds, and thrushes, were much attracted thither in the winter season. The redbreast and other little birds made their nests in the ivy. Robin and Robina were as familiar as could be looked for; laying, sitting, and feeding their young ones, as self and spouse sat within listening to the hum of operatives, or to the warning flutter, like a plaintive cry, of royalty as yet imprisoned in their cells.

"This shed was superseded by one in a better aspect for bees, S.E. instead of S.W., and slated instead of thatched, that it might be less hospitable to various small intruders. My ivy shed still remained, and was, by public advertisement I should think, made a refuge for destitute chattels. Amongst other things, the glasses off the frames were stowed away under it, when not in use. The song of the thrush and the blackbird is finer here than ever I heard it; as if it would compensate a luckless Southron for the absence of the nightingale. From what I saw going on, I sometimes entertained hopes that some of these birds were about to build in the ivy, in order to be nearer to me and to my fruit.

"Once in particular, a pair of universally familiar blackbirds gave me high hopes of such confidence. They were about that spot at all hours of the day. Exceedingly proud did the soberly-adorned lady appear of her sprightly and glossy mate with the golden beak. And he vied with *Gallus* himself in his assiduous devotion. If his exertions revealed an uncommonly bright and wriggling brandling, he would recede a step or two, and look at it; and his lady, as if jealous of the merest pretence of admiration not turned upon herself, would eagerly hop up, and quickly put out of sight the object of his gaze. His tones of welcome were the very guava of sound.

"Suddenly, however, this pattern of a husband was not seen. Had he proved false? His deserted partner frequented that corner more, rather than less. She was ever there. What was the burthen of her incessant soliloquy? Did she apostrophize her absent *Jo, Jo! Jo, Jo!*—or, was it φευ, φευ! φευ, φευ! Ah, me! Ah, me!—her anxious and mellow voice reiterated?

"But what is pussy smelling at? See! she endeavours to introduce her delicate paw behind the glass! I stepped up with all the haste of alarm, pulled forward the frontmost frame, looked down behind it, and the melancholy truth was revealed. There lay, stiff and lifeless, the subject of the bereaved widow's lament. It was apparent that he had dropped down behind the frame, and being unable to rise to his place of entrance, could find no other means of exit. He had died the slow death of starvation, in the sight and hearing of his mate.

"Will erect and cold humanity sneer at, and discredit, my belief of her utmost and untiring efforts to release and relieve him? Of her agony that they were unavailing? Will they doubt the tenderness, the incentives to new efforts which that full voice imparted as long as hope remained?—or the crushing pang of despair which came over that little heart when her fond appeal was no longer answered? Hear the sequel, thou sceptic; and learn that deep love, and constant, are not entirely engrossed even by woman's heart.

"The mourning bird was ever near the place. Her touching plaintiveness was quite infectious. Her φευ, φευ! φευ, φευ!—it was a trochee, by the lengthening the former, rather than unduly shortening the latter syllable—her φευ, φευ passed, in a few days, through all those shades of sound, which Braham could alone utter in perfection, till they arrived at the most decided, and most melting complaint of sorrow. She awaited our approach, as if she reckoned upon our sympathy, and claimed our respect for, and forbearance from, intrusion upon her grief. By degrees she rose more slowly, and with a longer sweep over the garden-wall. And then she rose not; but retired and hid herself. At length she lay, as near the fatal spot as she could get, almost lifeless. I took her gently in my hands, and held her tenderly to my breast, *hoping* to recover her. But no! She once more and faintly uttered her φευ, φευ! φευ——her head fell back, and her sorrows were past.

"We have not forgotten thy mournful cries, sweet bird! The ivy shed quickly disappeared. Thy bones and feathers, all that sorrow left of thee, repose with thy mate at the foot of the neighbouring peach-tree. Thy memory may possibly be embalmed in the immortality of the next gorgeous Sequel to the 'Dovecote and the Aviary.'"

[The vicar is heartily thanked for his concluding touch. There is so much earnest, real, home sorrow in the world, that they must have but a very incomplete experience of life, who, to indulge the luxury of woe, require such a stimulus as the poor blackbirds' tragedy affords—D.]

BRITISH PARASITICAL FUNGI.

In my first paper I endeavoured to give a general idea of Fungi, as the largest and most interesting Natural Order of our British Flora, which, although neglected, are undoubtedly worthy of attentive observation; not only from their beauty, the variableness of their forms, colours, and odours, their being found at every season and in every situation in which vegetation is produced, whether in the earth or on its surface, within fluids or on their surface, and in all parts of the globe—

> "In air, in water, and on earth,
> A thousand germs come struggling forth
> In drought and damp, in heat or cold:"

thereby forming the most extensive and interesting field for inquiry of any known plants. It is not this alone that makes a knowledge of fungi, their habits and properties, of such real importance, but it is the fact that, in the lower groups, they prey upon the living bodies of animals, vegetables, and provisions destined for man's support, not only depriving them of a majority of their nutritious portions, but also rendering what still remains unwholesome and injurious, converting, in some instances, wholesome food into a dangerous poison; and, secondly, in the higher and more perfect groups, thriving more particularly on animal and vegetable substances in a state of decomposition, they convert what, if allowed to remain, might prove deleterious and offensive to human life, into food the most nutritious of all vegetables, and so abundant, and easily and cheaply preserved, as to form, with some other indigenous plants equally neglected, a most delicious and valuable article of diet.

I will now consider them first in the lower groups, as most worthy the consideration of those interested in agriculture and horticulture; for although their presence depends so much on accidental circumstances that the experienced cultivator cannot guard against them altogether, the evil may still be considerably lessened by a little attention to the careful choice of seed and a judicious changing of crops on the land subject to them; as it is well known that the spores of many fungi will only germinate on particular plants or

animals, or on particular substances undergoing decomposition.

No one can picture the beauty of the lower groups of fungi but those who have microscopically examined their structure. Some, however, present objects of admiration even to the naked eye. For instance, who can visit the vaults of our London Docks without gazing with admiration on the *Racodium cellare* that there festoons their interiors. Many have the appearance of velvet, others of down, and are of the most lovely colours that can be imagined; others appear like stars, radiating as they do in their growth from a central point, which is probably, in the first instance, the germinating spore. In the lower groups, they are sometimes found on the surface of caves, and other dark and humid situations, growing in the manner above-mentioned. In the higher groups, also, this radiating growth is equally visible, which I shall explain when treating of fairy rings in my next paper.

Fungi are the only cryptogamic plants that are parasitical in their growth; for although lichens, mosses, &c., are found growing on other plants, it is generally believed they do not derive nourishment from the living bodies of these plants and deprive them of the nourishment intended for their support.

As well as the minute plants known as parasitical fungi, may be noticed others of enormous dimensions, parasitical in their growth, now placed amongst our flowering plants, which in many respects, from numerous characters, show their close affinity to fungi. One instance is, Arnold's Flower (*Rafflesia Arnoldi*), the largest known flower in the world, measuring from six to nine feet in circumference, each petal twelve inches from the base to the apex, and weighing about fifteen pounds. In structure this is very similar to a fungus, having the seeds assuming the condition of spores, the buds wearing the appearance of fungi, the petals of a fungoid substance, and, like fungi, the odour of tainted meat. The *Fungus Militensis*, called also the Maltese Champignon, or Mushroom of Malta, is another example.

Fungi are very troublesome in greenhouses, and when once established are not easily removed, but make sad havoc amongst our choicest floral productions. They may, however, be considerably checked by covering mould, intended for potting, with boiling water, which should be drained, and when dry enough run through a sieve; also moss, pot-sherds, pieces of brick, &c., used for the same purpose, should be scalded, to kill the larva of insects and spores of fungi, with which they are frequently loaded. Leaves and portions of plants affected with the same should be burnt to prevent their reproduction. The same care should be taken by the agriculturist, to prevent their being conveyed from place to place with straw or manure, as is too frequently the case, causing their injurious effects to be spread over an otherwise healthy track of land.

We have long been aware that many animal and vegetable substances form, when sound, wholesome food, but in certain stages of decomposition are highly deleterious; this is the case particularly with pork, corn, and wheat-flour; and cases have frequently occurred abroad, and in this country, in which persons, after eating such provisions, have been seized with the symptoms of poisoning; and cases are on record of persons having died in consequence of eating ham-pie, Italian cheese, and other articles of food, in which the presence of fungi has indicated the decomposition; and it may be considered worthy of notice, that by experiment it has been proved that the poisonous effect has not arisen from the fungi, as generally supposed, but from the substance on which they grew, and which was in a state of decomposition. Therefore, we may consider them as faithful messengers, warning us of a concealed and treacherous enemy, by providentially revealing to us the presence of decomposition, and at the same time rapidly removing it.

As my object in this paper is to confine myself entirely to the lower groups, and to make my readers acquainted with the depredations they more particularly commit, I shall briefly refer to those I consider most worthy of notice. The genus *Uredo* contains the most injurious parasites; their spores are so minute as to be conveyed in the sap-vessels through the roots, with the water that contains the nutritious portions of the soil, and to be dispersed throughout the whole vegetable body vegetating in those parts which are unhealthy, or otherwise most suitable to their growth; and earth, carried from soils affected with them, will cause their spores to be dispersed and propagated on land previously free from their attacks.

Uredo Rubigo (Rust), with *U. Fœtida* and *U. Segetum*, before-named, are three particular enemies to our corn, but the two last-named are by far the worst, often annihilating the crop before suspicion has arisen; but their presence may generally be suspected by an unusual luxuriance and increase of stature in the corn affected. They have also been much confounded together, but the following characters will distinguish them:—

Uredo segetum affects the bushes, leaves, and straw, destroying the whole plant, which more or less shrivels up, and has the appearance of being scorched and dusted over with charcoal. It is the smallest plant, has no odour, quickly bursts, and discharges the spores, and is found in wheat, barley, oats, rye, &c.

Uredo fœtida affects the grain only, the farina of which it destroys, leaving a greasy, sooty substance, which swells them beyond their usual size; when crushed has a very fœtid odour, like putrid fish; is the largest plant; seldom ruptures the integuments of the grain; frequently not detected till the corn is thrashed; on wheat; seldom, if ever, on other grain.

Puccinia graminis (corn mildew) is very injurious to corn, by depriving the plant of its juices; it consequently prevents the grain from swelling. *Lanosa nivalis* (snow mould) commits sad havoc amongst corn beneath snow, sometimes attacking whole crops, which it destroys, more particularly barley. *Æcidium Berberidis* (Berberry blight) is another fungus supposed to attack and injure wheat. This may be much doubted, but still it is quite worthy of the further investigation of those interested. *Merulius lachrymans* (Dry Rot) is very destructive to timber.

The following will be more familiar to us in our rambles through the kitchen-garden and orchard:—*Æcidium cancellatum, Puccinia Prunasum, Spheloda Pomi, Oidium fructigenum*, on fruit-trees and fruit; *Physisporium Solani*, supposed to cause the potato epidemic; *Tuburcinia scabies* (potato scab); *Botrytis infestans* (potato mildew); *Oidium Tuckeri* (vine mildew), the formidable parasite so destructive to the leaves and fruit of vines; *Erysiphe communis*, a surface parasite overrunning and destroying the pea; *Fusisporium atrovirens*, very destructive to onions; and *Rhizoctonia Crocorum*, a subterranean fungus on the roots of saffron, and very destructive.

The following are too familiar under our own domestic roofs:—*Mucor casei*, on cheese; *Pencillium crustaceum*, on gum, &c., prevented by the use of essential oils; *Mucor mucedo*, on fruit, pastry, and preserves; *Oschopa mucedo*, on various bodies, especially bread; *Aspergillus glaucus* (blue mouldiness), assists in the decomposition of many substances; *Peziza domestica*, on damp ceilings and walls; *Pencillium glaucum* (the vinegar plant), on substances decomposing, and fluids in becoming acid, placed in sugar and water, soon converts it into vinegar.

A few attack the living bodies of animals:—*Uredo caprearum*, on swallows; *Sphorundonema musca* (fly mould), destroys thousands of that insect in autumn; also *Botrytis Bassiana* (silkworm rot) is equally destructive to silkworms; *Achlya prolifera*, on the skin of gold fish; the caterpillar also carries about with it a *Clavaria* larger than itself. Nor does man escape, but, like vegetables, is attacked more particularly when in an unhealthy state.

The mothery appearance of beer, ropiness in catsup, owes its origin to fungi also; and the rotting of fruit, and fermentation of beer, has been attributed to the same cause; and the latter has been termed *Cryptococcus fermentum*. In conclusion, I cannot pass unnoticed *Eurotium Herbariorum*, that destroys the botanist's collected wealth, which has taken him, perhaps, his whole life to accumulate.

J. Yorke Brocas.

POINTS OF BEAUTY IN POULTRY.

It is, I believe, now confessed on all sides, that a standard of excellence for the different breeds of fowls on which amateurs bestow attention is very desirable, for the guidance

of those who expend their trouble and their money in endeavouring to raise them to perfection. The complaints against the decisions at the different exhibitions of poultry—complaints which, perhaps, more readily reach the ears of those who do not exhibit than of those who mingle in the excitement, appear to call for more fixed points of beauty in each kind of fowl than have at present been decided on. Many authors have given good descriptions of fowls, but *one person* is hardly likely to be *intimately* acquainted with all the varieties—*discussion* appears necessary.

In an endeavour to describe several sorts, I am prepared to hear from many quarters, "Anster Bonn knows nothing about this," and in plain truth, there are many kinds about which I know little. I will take the first step, however, hoping that many amateurs, who have paid as much attention to their favourite varieties as I have done to the Cochin-China, will assist me in this work, offering corrections where I am wrong, and additional information where mine is deficient. In commencing with the Spanish, I follow the order used in the prize list of the Birmingham show, although my own taste would induce me to place the Cochin-China first.

The *Spanish* cock is a tall bird, of an upright, stately bearing, and the hens are very large also, but not so tall in proportion. The plumage is jet black, with metallic lustre, and of a satin-like softness to the touch. The comb and wattles are very large and very red, the comb of the hen drooping over to one side. Legs and beak, dark grey or slate colour. The cheek and ear-lobes should be perfectly white. To get these *very* large and white, is, I believe, considered the perfection of high breeding. When a pullet has the cheek red, it will frequently change to white the second year, but I am told by an amateur of Spanish fowls, who has bred from some of the finest in the country, that it should be white from the first. The hens are celebrated for the size of their eggs, the shells of which are white. Accounts from persons who keep these fowls in different localities differ widely as to whether they are good layers or not. A fowl which lays such a very large egg can scarcely be expected to produce a great number, but from not wanting to sit, they, of course, lose less time than hens which hatch and rear their own chickens. The chickens are delicate, difficult to raise, and very late in fledging. The hens, which very seldom show inclination to sit, are said to make bad mothers; but I think this is blame which they scarcely deserve.

The *Dorking*, white, speckled, and grey, especially the two last, are remarkably fine, plump, compactly made fowls. Mr. Baily, in his useful little work on the management of the Dorking fowl, pronounces the speckled and the grey to be better than the white for domestic purposes, they are also found to be more hardy. "I would choose them," remarks Mr. Baily, in the little work just mentioned, "with small heads, taper necks, broad shoulders, square bodies, white legs, and well-defined five claws on each foot." Is it important that the comb should be single? Will some reader of The Cottage Gardener, who has devoted attention to the points of the Dorking fowl, kindly answer this question. The eggs have white shells, and are thick in proportion to the length. As is the case with the Spanish, there are different opinions as to whether the Dorking hens are abundant layers, but I believe all agree in pronouncing their eggs very good, both in size and flavour; they are good sitters and mothers.

Next on the list stands the justly-lauded *Cochin-China*—that *dear* fowl in every sense. Their points have been so thoroughly discussed, that it would be superfluous more than slightly to revert to the immense width and depth of the compact, square-built body, absence of tail, peculiarly-folded wing, well-feathered yellow legs, neatly-formed head, with single comb, the deep, hoarse crow of the cock, and the great number of dark-coloured eggs laid by the hen. Colour, I think, is, and must remain, a matter of fancy, particularly as it is well known to be impossible (however carefully selected the stock may be) to keep entirely to either dark or light birds. Buff and yellow fowls *will* occasionally throw grouse-coloured chickens, and the dark fowls light ones. For myself, I greatly prefer the light colours, from their bright and gay appearance, and because I have found in them more compact beauty of shape and silkiness of fluff than I have ever *happened* to meet with in the dark birds.

Weight is, with all these fowls, the Spanish, the Dorking, and the Cochin-China, a very important point. In judging of this, however, it should be viewed with some reference to whether the weight is distributed in *available* flesh, whether the fowl is in a healthy state, and whether this excellence (weight) is in accordance with *compact* beauty of form.

Breeders of Cochin-China fowls have latterly tried to render the colour *quite uniform*. I think this very handsome, but must confess that I should regret to see the little fringe of feathers pencilled with dark, forming a tippet on the neck, quite banished; especially as I have met with it in many of the choicest imported hens. Can any amateurs of the *Hamburgh* fowls initiate us into all the mysteries of pencillings and spanglings, ruffs and no ruffs, &c.; in fact, give a good description of the several varieties of these beautiful fowls?—Anster Bonn.

THE DOMESTIC PIGEON.

(*Continued from page 72.*)

ON LAYING AND INCUBATION.

The amateur who has peopled his dovecote with old pigeons—that is to say, birds of seven years old—must not expect them to lay nearly so often as young ones would do; and, when he has the choice, should always procure these. The old ones may easily be recognised by the red, or rather ash-coloured cast in their feet, covered with a whitish pellicle, apparently detached in the form of scales; by their very crooked nails, which are also longer; by their thin, slender, and hooked beak; and by the ends of the two mandibles, and especially by the corners of the mouth, covered, blackened, and hardened by the habit of deglutition; the eyelid is frayed, heavy, whitish, and scaly; the eye is dull, deeper in its orb, and never has that vivacity of expression that belongs to youth; finally, a neglected and dull plumage adds the last seal to the ravages of time. The dove-house pigeons have but little more than from two to four broods at most in the year, at least, when they are the stock-dove. The first brood generally comes off in the month of March, and the last in August. Pigeons of a pure race lay more frequently—at least, the greater part of them; but the *Mixtures* are the most productive, and we may occasionally meet with some that will have from nine to ten broods every year; but, generally speaking, they have seven or eight, and this is the largest production an amateur ought to expect.

The period we have just cited for the dove-house pigeon is also that when those of the dovecote lay most frequently, unite the best, and it is especially during this season that the young ones engender all the necessary qualities to become beautiful and large birds. We must, therefore, try to match these birds at a time so calculated that they may begin to lay in the month of April, or May at latest, if we would make the most of them. As soon as two birds are coupled, they immediately require a nest to receive the young family they are quickly about to produce, and if they can find a dark and obscure corner in the dovecote they will give it the preference. They both employ themselves in carrying to it some small and very light twigs, or straws, with which they construct in a simple manner the cradle for their posterity. When this work, which they carry on with great diligence, is completed, the male does not go far from it, and endeavours to retain his female there, or to call her back if she only leaves it for a moment. He continually displays his impatience by a particular sound of voice, much more full and soft than the common cooing. When she has yielded to his views, he recompenses her with the most tender caresses and flapping of the wings, at once expressing both his pleasure and hopes. He squeezes into the nest by her side, and does not cease one moment to testify his anxiety. The female remains in the nest a whole day, and sleeps there for two or three nights, whilst he continues near her and watches her. It is then that she lays the first egg, generally between the hours of twelve and two. She takes care to keep it warm without sitting upon it, and leaves it but seldom, and during very short intervals. In fifty-two hours—that is to say, two days after, between four and six o'clock at night—she lays a second. As soon as the two eggs are laid the cares of incubation commence.

Ordinarily the female never lays more nor less than two eggs, but it sometimes happens that she only lays one, and this caprice may arise from two causes. The first, which is the most common, proceeds from the youth of the bird; in this case pigeon-fanciers call this production a forward egg, and do not trouble themselves about it, because they are sure that at the next laying she will return to the general rule. In the second case it proceeds from a defect of conformation difficult to explain, but proved by her never laying more than one each time of setting. It only remains to remark it is an essential fault, which will last during her whole life.

(*To be continued.*)

DOMESTIC PIGEONS.

(*Continued from page* 73.)

TWENTY-FIRST RACE.

Smilter Pigeon (*Columba gyrans*).—They are a little stronger than the Tumbler, have a slight filament round the eyes, black iris, and shod feet. These birds have been discarded by amateurs for some time, because they turn over in flying, even in their dovecote. Whatever the space may be where they are inclosed, they rise at first to the top of it, then come down again by making circles first to the right and then to the left, exactly like a bird of prey which hovers and pursues in the air. Their character being quarrelsome and jealous, when they see two pigeons caressing they generally place themselves on the back of the male, and cramp him in such a manner that he is quite unable to defend himself. They often drive the sitting females from their nest in the same way, and these continued tricks, which greatly disarrange a dovecote, occasion also a quantity of barren eggs.

Common Smilter Pigeon (*Columba gyrans vulgaris*).—

This pigeon is grey, with black spots on the wings, or red, or pearl white, with a pure white horse-shoe on the back. It frequently breaks some of its wing feathers by the violence of its movements, which seem to resemble convulsions. Usually it is very productive.

(*To be continued.*)

COTTAGE COMFORTS: THE MILCH GOAT, AND ITS FOOD.

BY CUTHBERT W. JOHNSON, ESQ., F.R.S.

The subject of the following paper is so much in accordance with the best interests of many readers of The Cottage Gardener, that I deem no apology necessary for inserting in this place a considerable portion of what, in another valuable periodical, I not long since had occasion to remark (*Farmer's Magazine, vol.* 10, *page* 295, *third series*):—

The comfort derived by the inmates of a cottage from a regular supply of new milk need hardly be dwelt upon. Every cottager's wife, over her tea, every poor parent of a family of children fed almost entirely on a vegetable diet, will agree with me, that it is above all things desirable to be able to have new milk as a variation to their daily food of bread and garden vegetables. Now it is very true that many a kind-hearted farmer helps them with skim milk; but it is only now and then that this source of comfort and health is available to the poor cottager, or even to those who are able and willing to pay liberally for good milk. The inhabitant of towns, and of suburban districts, we all know, is at the mercy of the milk dealer; the milk he procures is rarely of the best quality, and under the most favourable circumstances he receives it with suspicion, and his family consume it with sundry misgivings as to its wholesomeness.

Having personally experienced these difficulties, and having about three years since commenced the attempt to supply my family with goat's milk, and as our experience is cheering, I desire to advocate in this paper the claims of the milch goat to the attention of the cottager, and the other dwellers in the suburban and rural districts.

Few persons are perhaps aware of the gentleness and playfulness of the female goat—how very cleanly are her habits, and how readily she accommodates herself to any situation in which she is placed. Confined in an outhouse, turned on to a common or into a yard, tethered on a grass plat, she seems equally content. I have found her readily accommodate herself to the tethering system, fastened by a leathern collar, rope, and iron swivel, secured by a staple to a heavy log of wood. The log is the best (and this with a smooth even surface at the bottom), because it can be readily moved about from one part of the grass plat to another. The goat, too, uses the log as a resting place in damp weather. The goat should be furnished with a dry sleeping-place, and this, in case of its inhabiting open yards, can be readily furnished; anything that will serve for a dry dog-kennel will be comfortable enough for a goat.

The milk of the goat is only distinguishable from that of the cow by its superior richness, approaching, in fact, the thin cream of the cow's milk in quality. The cream of goat's milk, it is true, separates from the milk with great tardiness, and never so completely as in the case of cow's milk. This, however, is of little consequence, since the superior richness of goat's milk renders the use of its cream almost needless. The comparative analysis of the milk of the cow and the goat will show my readers how much richer the last is than that of the former; 100 parts of each, according to M. Regnault, gave on an average—

	Cow.	Goat.
Water	84.7	82.6
Butter	4.0	4.5
Sugar of milk and soluble salts	5.0	4.5
Caseine (cheese), albumen, and insoluble salts	3.6	9.0

So that, while the milk of the cow yields 12.6 per cent. of solid matters, that of the goat produces 17.10 per cent., goat's milk yielding rather more butter, rather less sugar of milk, but considerably more caseine (cheese), &c., than that of the cow.

It must not be supposed that the *taste* of the milk of the goat differs in any degree from that of the cow; it is, if anything, sweeter, but it is quite devoid of any taste which might very reasonably be supposed to be derivable from the high-flavoured shrubs and herbs upon which the animal delights to browse.

The amount of the milk yielded by the goat varies from two quarts to one quart per day; it is most abundant soon after kidding time, and this gradually decreases to about a pint per day—a quantity which will continue for twelve months. This is not a large supply, it is true; but still it is one which is available for many very useful purposes; and be it remembered, that when mixed with more than its own bulk of lukewarm water, it is then in every respect superior to the milk supplied by the London dairymen.

In regard to the best variety of goat to be kept, I would recommend the smooth-haired kind, which are quite devoid

of beards or long hair. In this opinion I am confirmed by an experienced correspondent, Mr. W. H. Place, of Hound House, near Guildford, who remarked, in a recent obliging communication:—"I found that the short-haired goats, with very little beards, were the best milkers; but from these I seldom had more than four pints a day at the best (I should say three pints were the average), and this quantity decreases as the time for kidding again approaches (the goat carries her young 21 to 22 weeks). They should not be fed too well near the time of kidding, or you will lose the kids. In winter I gave them hay, together with mangold wurtzel, globe and Swedish turnips, carrots, and sometimes a few oats, and these kept up their milk as well as any thing, but of course it was most abundant when they could get fresh grass. The milk I always found excellent, but I never had a sufficient quantity to induce me to attempt making butter, except once, as an experiment; my cook then made a little, which was easily done in a little box-churn: the butter proved very good. I found the flesh of the kids very tender and delicate."

I find also from some East Indian friends, that the milch goats of Bombay and Calcutta are the chief source of the supply of milk at those places, and that for this purpose the Surat breed are preferred, which are smooth-haired, and devoid of either beards or horns.

I can add little to Mr. Place's information as to their food; mine have generally fed out of the same rack as a Shetland pony, with whom they are on excellent terms. The pony throughout the summer is soiled with cut grass, and I notice that the goats pick out the sorrel, sow-thistle, and all those weeds which the pony rejects. There is hardly a weed or a plant, in fact, which is rejected by the goat. It has been calculated, indeed, that—

The cow eats	276	and rejects	218	ordinary plants.
Goat	449	"	126	"
Sheep.....	387	"	141	"
Horse.....	262	"	212	"
Hog	72	"	271	"

In the garden (if they are, by any chance, allowed to browse) I notice that they select the rose trees, common laurels, arbutus, laurestinas, and the laburnum. Of culinary vegetables, they prefer cabbages and lettuces; they also bite pieces out of the tubers of the potato. They carefully pick up the leaves, whether green or autumnal, of timber trees; of these they prefer those of the oak and elm, and delight in acorns and oak-apples. We are accustomed to collect and store the acorns for them against winter; spreading the acorns thinly on a dry floor, to avoid the mouldiness which follows the sweating of acorns laid in a heap. As I have before remarked, none of these astringent substances affect the taste of their milk; and I may here observe, that with ordinary gentleness there is no more difficulty, if so much, in milking a goat than a cow.

(*To be continued.*)

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of The Cottage Gardener. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

Tenant Removing Shrubs (*C. S.*).—The book from which you have obligingly sent us an extract is no authority; nor is the decision in *Cooke* v. *Anderson*. It was merely the decision of a Sheriff's Jury summoned to assess damages. If the defendant was a nurseryman (and we are not told that he was not) he undoubtedly could remove the shrubs. Then, again, we have no copy of the case laid before Mr. Tidd; the facts of that case would probably remove all doubts. You may remove your shrubs, &c., if you please, but we are of opinion that if you do, and there is no agreement to justify you, your landlord may recover damages from you. It is a very true axiom, be assured, that no man should be his own lawyer. We do not see the importance of establishing the right in the tenant to remove shrubs, because it is in his power before he enters upon any premises to have an agreement with his landlord permitting him to do so.

Anagallis Cuttings (*Ignoramus*).—It will much benefit your three little anagallises to cut off their tops; do it at once, and try them again as cuttings, but keep the rooted halves, or older plants, in pots all the summer for store plants to keep all the winter. This is always the best time to look out anagallises for next year, as they do not lift well in the autumn, nor strike readily from cuttings at that season. They keep better in rather strong loam.

Tagetes Lucida (*Ibid*).—It is liable to go off as it did with you after cutting down; it is best treated as a biennial: sowing seeds of it, or making cuttings every year.

Stephanotis floribunda (*R. E.*)—The "fuss," as is always the case in such instances, was merely to procure seeds for the purpose of examination, to prove if the right place was assigned to the plant by the botanist who first described it. Botanists, like lawyers, look sharp after each other. A few lines on the "variety," would indeed be interesting; but recollect *Asclepiads* offer a dangerous ground for any speculations; bare facts only will suit. Has the cottony matter about the seeds been usefully employed?

Poultry Chat.—*W. A. E.* says, "I was witness to a curious fact the other day of a hen removing eggs from one nest to another. I had placed a set of eggs for a hen to sit upon. Before she took to her nest, another hen in the next box, separated only by a wooden partition, wishing to lay, and not liking my having taken her nest egg away, actually, with her beak, pulled *four* eggs over into her box. I called my family to see it, and again put back the eggs, when she again pulled them back with her beak. Another hen I have has done the same thing twice, though I did not actually see her. I have been much interested in the statements of poultry in your excellent publication. I am keeping an exact account of mine, which are very fine Dorkings. From eleven hens I had as follows:—*January*, 94 eggs; *February*, 122; *March*, the first fortnight 93, the last fortnight from five hens (the rest sitting) 59—152; *April*, from five hens the first three weeks, and three hens the last week, 87. I have been most unfortunate in chickens, almost all the eggs proving addled, without any reason I can assign. Also eggs with thin shells, although the fowls have *abundance* of lime. They are fed on barley, but have the run of fields."

Egg-eating Fowls.—*G. S.* says, "The cause is almost always a dislike to the nest from being too much *exposed*. If the eggs are laid in a place they like hens will not eat them. When the egg-eating first occurred, I placed the contents of the mustard-pot in an egg-shell, which had the desired effect for some time."

Feeding Young Goldfinches (*E. D. B.*).—The best food for young goldfinches is scalded rape-seed and sopped-bread mixed together, and given to the birds about every half-hour or hour; and it is indispensable to their well-doing, that a drop of water should be dropped in their mouths after each feeding, which is readily done by dipping the stick, flattened at the end a little, in some water, and letting it drop into their mouths, should they be open, and if not, the moment the drop of water touches the tip of the beak, they will perceive the moisture, and readily admit it.—William Rayner.

Nectarines (*J. H., Derby*).—Our correspondent says, that the tree has produced more than one fruit from each blossom. Surely your nectarine-blossoms must have been in bunches. We have often seen twins attached to each other, the product of monstrous blossoms, but do not remember to have seen more. Your fruit will require thinning immediately. You may reduce them to two-inch distances now, and continue removing some occasionally, until five to seven inches apart near the end of the stoning period; say, beginning of July.

English Rhubarb.—*M.* says: "In a late number of your Magazine, I noticed the statement that rhubarb-root grown in England is of little or no use. Calling to buy some Turkey rhubarb seed in Manchester lately, I was told there is a good deal grown near Sheffield, and sold as foreign. I was also informed that a tincture is made from the root. We have grown the Turkey, that with a deeply-indented leaf, for many years, and so well is its value known, that nearly all our roots have been stolen. I have found it most efficacious, both as an aperient and tonic medicine; in the latter case, in combination with ipecacuanha and Castile soap, and have received the grateful acknowledgments of those benefited thereby. The sort now in use, with a pointed leaf, is also most useful, but not so powerful, requiring a larger quantity. I will only add, that the stalks make most excellent vinegar, which has been greatly admired." There is no doubt that the roots of English-grown rhubarb are purgative, but it is equally true that medical men state that a larger dose of it is required than of that produced in a hotter climate.

Bees (*J. K.*).—Although your hive is a strong one, it is not sufficiently so to allow of the bees going up into the bell-glasses so early; it would have been better to have waited another fortnight before putting them on, especially in this ungenial spring. Indeed, it is always better to let the bees show evident signs of want of room before putting on the glasses, and then they will enter them and commence working at once.

Bees (*W. A. E.*).—When a cap or super-hive is put upon a stock of bees it is best to open *all* the holes, if the cap or super will cover them; if not, only such as it *will* cover.

Over-fertile Soil (*A Constant Reader*).—It is rarely we hear complaints of this kind. If it arises, as you suppose, from the turf and leaf compost, trench your ground, turning the surface-spit to the bottom. This will probably prevent your plants producing more leaves than flowers.

Diseased Melon-leaves (*Sarah*).—Give them more *bottom*-heat, and more air.

Moving Hive (*L. S.*).—If you had attended to what has appeared in our pages more than once, you would not have had to mourn over your 200 benumbed bees. Put them under the hive at night. When a hive is obliged to be moved, it must be done only a few inches at a time, or the bees will next day fly to their old locality, and be injured, as in your case, or entirely destroyed.

Seed Crusher.—*An Old Subscriber* wishes to know where he can purchase a small mill for crushing barley and other corn for feeding chickens.

PAYNE'S COTTAGE HIVE (*R. Wilson*).—Write to J. H. Payne, Esq., Bury St. Edmunds.

CAYENNE FUMIGATION.—In answer to our query, Mr. C. Langley says, relative to his failure reported at page 106—"I did not use capsicums when I tried my experiment; I purchased cayenne pepper at a respectable grocer's. Allow me, also, to correct a mistake—it was not eight ounces of tobacco I used, but four ounces." We think that until Mr. Langley has used capsicum pods he must not condemn the practice.

EGG-EATING HENS (*An Inquirer*).—Any hen that lays soft or shell-less eggs will eat them occasionally. Cure her of laying soft eggs, and you prevent the other evil. We have had, at one time, a whole hen-yard subject to this soft-egg laying. We reduced their food one-half, both in quantity and richness, and the soft-egg laying ceased. In almost all instances, if they have not a deficient supply of calcareous or chalky matters, it arises from the over-excitement occasioned by excessive feeding.

GARDEN FORK (*A Subscriber*).—If you buy our No. 25, you will there find a drawing and description of the best kind of garden fork, but we would have the points shaped like those shown at p. 80, of the present volume, if the soil were light.

SUNDRIES (*E. M.*).—We never heard before that when *ivy* reaches the top of a tree it kills it, but rarely sooner. We never knew such a catastrophe occasioned by ivy until it had so covered all the tree's foliage that it had its functions stopped by the exclusion of light. This was after the ivy had reached the top certainly. Our correspondent also wishes to know, "what is the difference between the dry and wet bulbs in Mason's hygrometer in a dwelling-house, which is tolerably dry? or rather, I should say, what is the ordinary range of this difference? I speak of the actual difference observed. What is the highest and what the lowest figure you have ever observed?" Your other queries next week.

CUCUMBERS (*J. K.*).—"The soil being very good," with "plenty of bottom heat," is enough to account for the gum-spots on your cucumbers. Give all the air and light you can without chilling them.

VINE SYRINGING (*W. W.*).—We never syringe the leaves at all. You will find quite enough moisture by watering the path well in the middle of the day, and at night, before shutting up. Give plenty of air.

COVENT-GARDEN PRICES (*A Constant Reader, &c.*).—We gave the report as early as we could. We cannot give prices. They are totally deceiving as published by others.

ANNUALS SOWN IN TURF.—*W. C. C.* says:—"Allow me, while writing, to thank your correspondent Mr. Beaton for suggesting the sowing annuals on pieces of turf, and keeping in a frame. I have acted on it this year, and am delighted with the result; they are not nearly the trouble of sowing in the old-fashioned way, as you only sow one patch of each, instead of several, and, when they are ready, cut small pieces off, and plant a patch where you like about the garden. I did not sow mine till Good Friday, and have no doubt shall have some of them in flower by the end of the month, when had they been sown in the open border, most likely, with the long drought we have had, they would have scarcely been out of the ground at present." The grub eating the buds of your roses is "the worm i' the bud" of Shakespere, called by naturalists either *Argyrotoza Bergmanniana*, or *Tortrix rosana*. There is no known remedy. See our No. 34, page 86.

PIPE-CLAY LABELS.—Will *A Parson's Wife* oblige us with the full direction where these may be obtained, at Gloucester or elsewhere, in wholesale quantities.

CALENDAR FOR JUNE.

ORCHID HOUSE.

AERIDES, SACCOLABIUMS, VANDAS, and other allied Indian plants, will now be growing freely, and will require abundance of water, both at the roots and over the tops. Any on blocks that are growing freely should have some moss tied round the block to retain moisture a longer time. AIR should now be liberally given almost every day, unless cold, wet days should intervene. The air openings should be so constructed as not to allow a rush of cold wind over the tops of the plants. BASKETS: the plants in them will be making their new growths, and will require to be dipped in tepid water at least once a week, or even oftener in very hot weather. BLOCKS: syringe twice a day, in the morning by seven o'clock, and in the afternoon about four. CATESETUMS, CYRTOPODIUMS, CYCNOCHES, and their like, give plenty of water at the root, taking care that none lodges amongst the young leaves for any length of time. DENDROBIUMS: many of this fine family will, towards the end of the month, have finished their growth. They should then be placed in a cooler house, and less water given to them. HEAT: the natural heat of the atmosphere out-of-doors renders less fire necessary. During the day, unless in cold, wet weather, none will be needed, a little every night will yet be useful, especially in the Indian-house. INSECTS will breed rapidly during this warm season; every means must be resorted to, to keep them under. MOISTURE: the air of the house should be kept full of moisture during this month. Many of the roots will be dangling in the air, sucking up, as it were, the moisture in it. MOSS on the outside of the pots, and on the leaves, will accumulate greatly with the heat and the moisture, the pots must be washed, and the leaves sponged frequently, to open the breathing-pores of the latter. OFFSETS on the stems of Dendrobiums should be all taken off, to encourage growth from the bottom; they may be made plants of if required. PLANTS IN FLOWER will last much longer if removed into a cooler house. SYRINGE: this instrument will, during the month, be in constant requisition. In using it, let the water from it fall gently upon the plants, imitating a gentle shower of rain. SHADE must be applied during bright burning sunshine. WATER, apply liberally to all growing plants, but be sure and use soft or rain water. A slate tank is the best thing to contain it; iron vessels should by all means be avoided. WEEDS, destroy constantly; but such plants as ferns, heaths, except creeping species, that come up amongst the rough peat, may be allowed to grow, they will shade the roots and serve as indicator, when they flag, to show that the compost is dry and requires water.

T. APPLEBY.

PLANT STOVE.

ACHIMENES: those early potted will now be in flower; supply them freely with water; repot the last batch to flower late. *A. picta* put thickly into wide shallow pans, and grow on to flower at Christmas. AMARYLLIS, going out of bloom, and their bulbs ripening, place in a cold frame, and give no water to induce them to rest. AIR, give liberally all day, and in hot, close nights leave a little on. APHELANDRA AURANTIACA, grow on in a hot pit to bloom in winter. BASKETS, where used, keep moist by dipping and syringing frequently. BARK-BEDS, renew, if the heat declines. CUTTINGS, put in if required; pot off such as have struck root. CLIMBERS, on the rafters, train, and keep within bounds. In pots, train round the trellises; attend to them constantly, or they will soon get out of order. FRANCISCEAS done flowering, place in a cold frame to rest. GARDENIA, treat in a similar way. GESNERAS, repot young plants, put in cuttings of. GLOXINIAS, the same; every leaf will make plants if put in as cuttings. HEAT, keep under, no fire heat is required now. INSECTS of all kinds, destroy diligently, especially the red spider and mealy bug. IXORAS, the large specimens will now be in flower; keep them moist at the root, but refrain from syringing over the bloom; young plants repot, and tie out young specimens. MOISTURE in the air, keep up by flooding the walks daily. PLANTS IN FLOWER, keep cool, and shade them, this will prolong the bloom. POTTING, do whenever it is necessary. SEEDS of many stove plants may yet be sown; transplant seedlings when just out of the seed-leaf. SYRINGE, use daily. WATER, apply liberally, but not so as to sodden the soil. TOP-DRESS the whole stock of plants during the month, it refreshes and gives them a neat, clean appearance; wash the pots if mossy. WEEDS, constantly eradicate. WORMS in pots, destroy with lime water.

T. APPLEBY.

FLORISTS' FLOWERS.

AURICULAS and POLYANTHUSES, place on ashes behind a north wall, in the shade; keep clear of weeds, and constantly supplied with water. Seedlings prick out in shallow pans or boxes. CARNATIONS and PICOTEES, place on the stage; put stakes to, and water freely. CHRYSANTHEMUMS, pot; plant out some old plants to layer and form dwarf plants. DAHLIAS, finish planting; put stakes to early; put in cuttings of new or scarce kinds. FUCHSIAS, pot off cuttings; train specimens, and water occasionally with liquid-manure. Sow seed of HOLLYHOCK; put stakes to; prick out seedlings. HYACINTHS out of bloom, take up and store. INSECTS, destroy. PANSIES, water freely in dry weather; put in cuttings of; sow seed, and transplant; layer long, straggling shoots; shade from hot sun. PINKS, tie to sticks; place Indian-rubber rings round the buds when more than half-grown; transplant seedlings; put in pipings. RANUNCULUSES, keep very moist; place shades over them as the blooms expand. ROSES, look to the buds, and destroy by crushing the worm in the bud. Put such as are in pots, and have done blooming, in a cold pit, or in the open air in a shady place. TULIPS, cut off all seed-vessels, and take up the bulbs as soon as the leaves decay. VERBENAS, in the border, shade from sun; peg down the long branches in pots; tie out, keep moist, and shade. WATER, give to all in pots freely. T. APPLEBY.

FLOWER GARDEN.

ANEMONES, take up as leaves wither; dry and store. ANNUALS (Hardy and some Tender), plant out to remain, in showery weather best; sow for late crops; some (hardy) may be sown, b. AURICULAS, continue shading; plant offsets; prick out seedlings. BASKETS or clumps, form of greenhouse plants. BEDS, attend diligently to recent planted; water and stir them in dry weather. BIENNIALS and PERENNIALS, sow, if omitted, b. BOX edgings clip. BULBOUS ROOTS (Tulips, Jonquils, &c.), not florists' flowers, remove offsets from; dry and store; may transplant some, or keep until autumn; autumn-flowering, as Colchicums, &c., take up as leaves decay, separate offsets, and replant, or not until end of July. CARNATIONS in bloom, attend; aid the bud-pod to split with a pair of narrow sharp-pointed scissors; bandage buds, to prevent bursting, with Indian-rubber rings, or tape; water every second day; tie to supporters, &c.; prick out seedlings; make layers. CHRYSANTHEMUMS, plant out to layer next month. CYCLAMENS, transplant. DAHLIAS, finish planting-out, b. DRESS the borders assiduously; neatness now stamps a gardener's character. FIBROUS-ROOTED Perennials, propagate by cuttings; shade and water. FLOWERING PLANTS generally require training and support. GRASS, mow, roll, and trim edges. GRAVEL, weed, sweep, and roll. HEDGES, clip, e. LEAVES and stems decaying, remove as they appear. LIQUID MANURE, apply occasionally to all choice flowers. MIGNONETTE, sow for late bloom, b. MIMULUSES, plant out. PŒONIES (Chinese), water freely with liquid manure, or they will not flower finely. PINK SEEDLINGS, prick out; make layers. PIPINGS (or cuttings) of Carnations and Pinks may be planted. POTTED FLOWERS, dress, stir earth, and water regularly. RANUNCULUSES, take up as leaves wither, dry and store. ROSES, bud, lay, and inarch; fumigate with tobacco to destroy the aphis or green fly; Roses out-of-doors, wash with tobacco or ammonia water. SALVIA PATENS, pinch down centre stem to make it bushy. SEEDLINGS of Perennials and Biennials transplant. SEEDS (ripe), gather in dry weather. SEED VESSELS, remove, to prolong flowering. WATER, give freely and frequently to all newly-moved plants, and to others in dry weather; early

in the morning or late in the evening is the best time. *Brompton Stocks* and *Moss's Intermediate* should be sown on a north border. Sow another succession of the *low annuals* to flower late, b. Peg down *Salvias*, and, for a time, until the layers are rooted, cut off the flowers. Verbenas, peg down to cover the beds sooner. Tulips, continue to shade to prolong the bloom, b.; towards e. expose them to full sun to ripen the bulbs; take off seed-vessels for the same purpose. Slips of Double Wallflowers, Sweet Williams, and Rockets, put in, either under hand-glasses or under a north wall or low hedge. D. Beaton.

ORCHARD.

Aphides, destroy on all trained trees. Apricots, thin for tarts; destroy caterpillars. Apples, search for caterpillars, and dress for American blight. Currants, stop watery wood. Currants (black), water if dry; cleanse from fly. Cherries, free from aphides. Disbud all trained trees. Figs, thin the young wood, and stop. Fruit of all kinds, thin where too thick. Gooseberries, free from caterpillars. Insects in general, try to extirpate. Mulching, practice where necessary. Nectarines: see Peaches. Nuts, dress away suckers. Peaches, thin both wood and fruit, and stop gross shoots. Plums, cleanse from aphides, and disbud. Pears, disbud and stop. Raspberries, thin suckers. Strawberries, water if dry, clean runners, and put something to keep fruit clean; beware of mice. Strawberry (Alpine), clear runners from, and water. Stopping, practice constantly, where necessary. Thinning, practice both with fruit and wood. Training, commence and continue. Top-dressing, attend to. Vermin, destroy. Vines, thin shoots, and stop. Watering, attend to. Wasps, destroy.
R. Errington.

FORCING STOVE.

Atmospheric Moisture, secure liberally, and continue to increase. Cucumbers, keep thinned and stopped; give plenty of atmospheric moisture to. Cherries, water liberally, and cleanse from aphides; ventilate very freely. Capsicums, shift finally, and place in a warm situation. Fire-heat, dispense with as much as possible. Grapes, thin, stop, and tie shoulders of the late ones. Grapes ripening, remove a few laterals. Liquid Manure, apply where size and strength are required. Melons, attend to setting, water freely, but not frequently, when swelling; thin the vines very frequently, and attend to linings; use dressings and fumigations to avert the attacks of insects. Nectarines, treat as Peaches. Peaches, disbud, and stop gross shoots; apply liquid manure, and thin fruit. Peaches ripening, remove those leaves or portions which shade the fruit. Pines, shade for a few hours if the sun is intense; shift liberally the succession; water all when necessary, and keep a jealous eye on bottom-heats. Strawberries, turn out healthy plants from forcing-house; they will fruit in September. Shading, practice with delicate things, during intense sunshine. Vines, attend to disbudding and stopping. Ventilate freely. Watering, neglect not.
R. Errington.

GREENHOUSE.

Air, admit freely to all the hardier plants, such as cinerarias, calceolarias, &c., as the cooler they are kept the longer will they bloom, and the freer will they be from insects. The Hardier Plants should now be placed out-of-doors, in a sheltered place, to make room for fresh importations from the pits; and here arises the great difficulty in the case of those who have only one house, as the plants removed, intended to be kept for another year, would have been all the better to have been kept in until the fresh wood was made. Many winter-flowering things, such as *Daphnes*, *Cytisus*, *Heaths*, &c., may now be set in a sheltered place out of doors, and safely kept; but they will neither bloom so fine nor yet so early as they would have done had they been kept longer in the house. Another difficulty arises from the wish to make this single greenhouse suitable for plants in bloom, requiring a cool atmosphere; and plants done blooming, such as early *Camellias* and *Azaleas*, that require a high temperature, and a moist atmosphere, to enable them to make their wood and set their buds early. Any greenhouse may now be used admirably for this purpose, merely by shutting it up early in the afternoon; syringing the plants at the same time, and give but little air during the day; but then this would soon ruin the health and appearance of such things as calceolarias, &c., in bloom; though it would answer well for bringing on large fuchsias and geraniums for succession. Hence the importance of screens, &c., for securing different temperatures. Plants placed at first in a sheltered place, must in general be fully exposed before autumn, to perfect their wood. Altogether, after the few days shading at first, the pots, or rather the roots in the pots, suffer more from complete exposure than the *branches*. The great thing is to avoid sudden extremes. Cacti will now want watering freely, and full exposure to sun, to have the flowers fine, or perfect the wood of the early kinds. Cuttings insert, and pot off when struck; many of the first struck will make fine plants for autumn and the beginning of winter. Climbers—many tender annuals, such as Thunbergia and Ipomea, may now be introduced, either upon pillars or trellises. Nothing suits annual kinds better than a young tree, or the branch of a tree, well stored with twigs. *Kennedyas* and *Zichyas* fasten to pillars and trellises, so that the flowering shoots may hang gracefully and negligently. The same may be said of *Passifloras*, &c. Cleanliness must be particularly attended to. No plants can be healthy with yellow or dust-encrusted leaves; and the sight of such is always a speaking reproach. The system of picking off every yellow leaf that presented itself as you went round with the watering-pot would prevent the woe-begone aspect which yellow-leaved plants always wear. It always shows a want of system when a set period must be appointed for picking the dead leaves from plants. Grafting may still be done, in the case of myrtles, oranges, Daphnes, camellias, &c.; but, as it is getting late, you must try and obtain scions from retarded plants, and then place them in a gentle hotbed, and keep them close until the union is effected. Oranges and Lemons should have the blossom thinned and impregnated where fruit is wanted. Seedlings of all kinds prick off. See what was lately said about *Achimenes*, *Gloxinias*, *Gesneras*. Every one with a cucumber-box, and a cupboard in his kitchen, may stock his greenhouse with them in summer. Shift everything that requires it, for all vital action is now rapidly progressing. Soils procure and husband in a dry state; for top-spit turf, nothing is better than stacking it in narrow ridges, and thatching it to keep it dry. This kept a twelvemonth will be fitter for use than mould regularly turned and chopped ever so often during the season. Torenia asiatica is now a fine object in a greenhouse; it looks most elegant in a vase, elevated a foot or eighteen inches with sprigs, and the most of the shoots allowed to dangle over the sides of the vase. Watering will be required oftener; and, in small pots, sometimes twice a-day. *Manure-water* may be given liberally, to promote luxuriant growth when wanted. Let it be weak, however, and given often. Young hands often make great blunders in using it too strong, especially when plants are young.
R. Fish.

KITCHEN-GARDEN.

Alexanders, earth-stir and earth-up. Angelica, earth-stir, or earth-up, as the case may require, and promote strong growth with liquid-manure water. Asparagus seedlings, keep clear of weeds, and earth-stir to promote growth; beds in cutting sprinkle with salt once a week during the cutting season, and earth-stir often with some pointed implements; discontinue cutting about the 20th. Basil, plant out in rich warm borders in full crop, and water well previously to planting, should the weather be dry. Broad-beans, plant out for late crops in cool situations, in a rich soil, and water well at the time of planting in dry weather. Beets, thin out, and fill up any vacant spaces; do this of a dull evening, with care, and water well at the time. Borage, thin ten inches apart, and save seed from autumn-sown. Borecoles, prick out of all kinds four to six inches apart every way. Brussels Sprouts the same. Brocolis the same, and plant out finally of early kinds, such as the *Cape* and *Walcheren*. Cabbages, prick or plant out finally. Carrots, thin out main crops five to seven inches apart, and use the hoe freely among them. Cardoons, thin out and attend to. Cauliflowers, prick out, or plant out, in succession; basin up the early crop, and water well, and with manured water at least once a-week, and look over and invert a few leaves down over the heads of those that are turning in, to preserve them of a white colour. Celery, prick out, and plant out finally, and water well at the same time. Cucumbers, plant out under hand-glasses on a little bottom-heat; keep the glasses close until the plants are established, after which inure them to the open air by tilting, &c. Those in a forwarder state, let the earth round the hills or ridges be well forked up for the roots to run out; stop and train out their stems; those in pits and frames should be weekly attended to, as to stopping and thinning, and all decayed leaves removed, and a top-dressing given if required. Capsicums, plant out in warm borders. Endive, make a little sowing of both kinds, Batavian and Green Curled, for early use. Garlic, Shallots, and Underground Onions will be fit to take up towards the end of the month, and should be dried off well before being stored away for use. Herbs of all kinds should be cut when in flower for drying or distilling. Jerusalem Artichokes, keep clear of weeds. Kidney-beans, dwarfs and runners, sow for late and last crops, and should the ground be very wet at the time of sowing, give a thorough soaking of water, which will cause them to vegetate quickly; attend to sticking and earth-stirring among advancing crops. Leeks, thin out and transplant. Lettuces, sow often, and thin out early; they should be sown where they are to remain, to mature their growth; place strong sticks to those intended for seed to tie them to, and tie in a few weekly for use according to the consumption. Melons, lose no time in planting out for late and last crops; look daily to those setting their fruit; attend to this setting and stopping about eleven o'clock in the forenoon, and to top-dressing or earthing-up, &c., about three in the afternoon of a fine calm day, after which sprinkle with water, and shut up early; give an abundance of air to those ripening off their fruit, and be sparing of water among them. Mint, keep clear of weeds. Sweet or Knotted Marjoram, plant out in rich warm borders. Onions, pay particular attention to early thinning-out, and surface earth-stirring, or fill up any vacant spaces by transplanting. Parsley, sow or thin out, and transplant. Hamburgh Parsley, thin out. Parsnips, finally thin out eight to ten inches apart, and use the hoe freely among them. Peas, any of the tall *Knight's Marrow* kinds may be sown the first of this month, the earth being thoroughly soaked with water, should the weather be dry; but towards the end sow any of the dwarfer early kinds, such as *Early Warwick*, &c.; attend to hoeing and sticking advancing crops. Potatoes, attend to earth-stirring or earthing-up without injury to the young fibre. Radishes, sow often in cool situations, in rich soil. Savoys, prick and plant out finally. Spinach, sow in succession, and thin out. Sea-kale, attend to surface-stirring and thinning-out old crowns, if not already done; seedlings thin out; cut away any flower-stems unless seed is required. Scorzonera, Salsafy, and Skirrets, thin out from four to six inches apart; use the hoe freely to encourage growth. Turnips, sow and thin out young crops. Vegetable Marrows, lose no time in planting out. Thyme, plant out seedlings, b. Use the *hoe* freely in dry weather; attend to all kinds of *pricking* or *planting-out* in rainy weather, or during evenings, as very much may be done in this way at that time of the day during very dry and hot weather; for pricking-out, let the beds or borders be dug up, made neat, and lined out, and thoroughly well watered an hour or two before hand, and again after planting.
T. Weaver.

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WEEKLY CALENDAR.

M D	W D	JUNE 3—9, 1852.	Weather near London in 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
3	Th	Spearwort flowers.	29.679—29.672	74—39	S.W.	08	48 a. 3	7 a. 8	9 a 46	15	2 9	155
4	F	Lady's Finger flowers.	29.904—29.819	66—36	N.W.	01	48	8	10 44	16	1 59	156
5	S	King of Hanover, b. 1771.	29.833—29.773	62—45	S.W.	14	47	9	11 29	17	1 49	157
6	Sun	Trinity Sunday.	29.950—29.822	61—52	S.W.	—	47	10	morn.	18	1 38	158
7	M	Vine flowers.	29.965—29.937	66—53	S.W.	01	46	11	0 2	19	1 27	159
8	Tu	Purple-spotted Martagon flowers.	29.960—29.936	71—56	S.W.	—	46	12	0 30	20	1 16	160
9	W	Bryony flowers.	29.963—29.551	61—48	S.E.	02	45	13	0 51	☾	1 5	161

Meteorology of the Week.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 70.3° and 47.1° respectively. The greatest heat, 90°, occurred on the 7th in 1846; and the lowest cold, 35° on the 3rd in 1837. During the period 102 days were fine, and on 73 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

ANEMONE. WIND FLOWER.

(*Continued from page* 108.)

Anemone ranunculoides: Yellow Wood Anemone; Yellow Wood Crowfoot; Crowfoot-like Wind-flower.

Description.—It is a perennial. *Root* tuberous, black, roundish. *Leaves* few, often five-leafleted, very dark green. *Flowers* sometimes two on a stem, petals yellow, oval, usually five in number (but sometimes six), two alternately outer, and two inner, and one having one side within, and one side outside the next petal; flower-stalk hairy, short so as only just to rise above the *involucral leaves*, which are three in number, nearly stalkless, and deeply cut. *Seeds* roundish, pointed, tailless, but beaked and hairy.

Time of blooming.—April.

Places where found.—In woody places; very rare. Near King's Langley in Hertfordshire, and near Wrotham in Kent.

History.—It has been suspected to have been introduced from the Continent of Europe, but never being mentioned by any of our earlier authors on gardening, its rarity is no argument in favour of that opinion, for there are several native plants quite as rare, and as confined to very small localities. Even abroad, as is observed by Ray, it rarely occurs. He also points out that it is liable to sport, so as to have two and even three flowers on a stem.

Anemone apennina: Mountain Blue Anemone; Large-leaved Wood Anemone; Single-purple Wood Crowfoot.

Description.—It is a perennial. *Root* like that of preceding. *Stem* round, purplish, but green near the flower, about eight inches high, slightly hairy. *Root-leaves* on long foot-stalks, three-leafleted; leaflets variously cut, somewhat pointed, hairy on both sides; one three-leafleted leaf on a short foot-stalk sheathing the stem. *Flower* solitary, pale blue, sweet-smelling; petals spear-head shaped, but sometimes oval, twelve to fifteen, arranged in three rows; involucre of three leaves, each three-leafleted and deeply cut. *Seeds* pointed and tailless.

Time of flowering.—April.

Places where found.—In groves in midland counties of England. Very uncommon.

History.—Its rarity, and the fact that in Ray's time the Dutch gardeners first obtained it from Italy, have induced some botanists to think it not a native of England, but that it has escaped from our gardens. Varieties have been found with short leaf-stalks, and others with white flowers. The Italians call this and some other kinds *Wood Ginger*, because the roots are tuberous and acrid, like those of the true ginger. The plant and the root bruised and applied to the skin produce a blister, and have been used to remove hard tumours, warts, and corns.

Many years ago our friend Dr. Wallich published, in his edition of Roxburgh's Flora Indica, an account of a very beautiful evergreen-tree, under the title of *Cornus capitata*, or Globe-flowering Dogwood; but it was subsequently raised to the dignity of a new genus, and is now known as *Benthamia fragifera*, or Strawberry-fruited Benthamia.

It is a large bush in its native wilds of the East Indies, but in the southern counties of England it is said to have attained the heighth of 20 feet. There it is hardy, but it will not stand the winters round London.

It was first raised here in 1825, in the garden of J. H. Tremayne, Esq., of Heligan, St. Austle, Cornwall. The seeds were sent there by Sir Anthony Buller, during his residence in the East Indies. The plant was 16 feet high in the open shrubbery at Heligan, in 1832, when it first flowered. In May, 1833, a coloured figure, with descriptions of it, appeared in the Botanical Register. The name was given by Dr. Lindley, in compliment to George Bentham, Esq., then Secretary to the London Horticultural Society.

Benthamia is in the Tetrandria-Monogynia class and order of Linnæus, and belongs to the small order of *Cornels* (Cornaceæ), being closely allied to the *Cornus* itself. A good idea of it may be formed by supposing *Cornus mascula* to be covered with the flowers of

Stuartia malachodendron, and the fruit of *Arbutus Unedo*, but somewhat larger. Thus the flowers are not very conspicuous, but they are inclosed in yellow bracts in the form of an *involucre*, which are more showy; the heads of ripened fruit are roundish, and of a tawny red colour, drooping a little from the weight of the fruit, the whole appearing very gay late in the autumn.

After all, the fates have been more propitious to us, as a nation of gardeners, than our senators and admirers of Rotten-row; and when the Crystal Palace rears its elegant proportions in its own park at Sydenham, this *Benthamia fragifera* will be among the first plants which Sir Joseph Paxton will select for representing the order of Cornels. There it will not only commemorate the name of a distinguished botanist, but that also of his uncle, the great Jeremy Bentham, of whom it was said, that he was "the greatest benefactor to mankind that has lived since the commencement of the Christian era." The Rev. W. Fox, in his Sermons on Christian Morality, says, "The late Jeremy Bentham was the ablest expositor of what was really Christian morality, the true law of the Lord, as to social duty, that our country, or the world, has yet produced. The whole of his writings are proofs and illustrations of the position that we shall find our own greatest happiness in the promotion of the greatest happiness to others." Different minds have different ideas of happiness: hence it is that the Crystal Palace has been banished from London. Nevertheless, we shall all be happy when we go down to see it, and find the *Benthamia* in fruit and flower at the same time, and looking as luxuriantly as it ever did in Cornwall; and so it will, if they give it strong rich soil, and plenty of head-room. It will ripen its fruit also in great abundance, and the seeds will grow as freely as those of the gooseberry. Mr. Beaton once received a batch of its seedlings direct from Heligan, the very first that were raised in Europe, and before the plant was seen alive in London, but he could not get it to head against the frost, even on the sunny *braes* beyond the Malvern hills. But, as we said before, it will thrive in the Crystal Palace's domain at Sydenham, a domain that will outrival the Horticultural Society, for it is a more tractable soil, and capable of better drainage. We rejoice, too, that, triumphing over petty jealousies, the gardens and conservatories are to be placed, as they should be, under the superintendence and direction of Sir Joseph Paxton; and the decorative department of the buildings is consigned to Mr. Owen Jones.

We once heard one of its would-be-annihilators ask, in a tone of triumph, "Where is the money to save it to come from?" This has been twice answered to our own knowledge. Sir Joseph Paxton might have commanded £250,000 to carry out his intentions and designs; and now, when it was known that the establishment was to be a joint-stock company in 100,000 shares, no less than 150,000 were applied for the first week.

The frontage of the Crystal Palace domain is bounded by the Croydon Railroad, and its other extremity touches upon Penge Wood. B. J.

FORSYTH MSS.

Next among the letters worthy of being extracted occurs the following, dated Lisson Grove, February 10th, 1800.

DR. JOHN CALDER TO MR. FORSYTH.

There is some spell or charm hangs over my long intended visit to you at Kensington. Every day, since I had by a line from Mr. Elmsly the lamented information of Mrs. Forsyth's death, and your own illness, have I purposed to see you; but ill health or bad weather has hitherto prevented me. I do most sincerely condole with you, and so does my wife, on the loss of your worthy partner, whose affections for some years past appeared to be very much disengaged from this world, and who was, I doubt not, well prepared for a removal into a better. To die, indeed, seemed to me so much her gain, that although we cannot at our pleasure command down the feelings of nature, or suit our spirits to occasions as we set our watches to time, yet any excessive degree of regret or sorrow at her death, even in her nearest and dearest friends, appears to be over selfish, and rather ungenerous to the friend whose loss to us we cannot help, on our own accounts, deploring. I hope and pray that you, her children, and all her friends and acquaintances will ever retain a tender remembrance of all that was good and amiable in the deceased, and that God will work out of our affection for her a golden chain, to draw us after her to perfection and happiness. I trust this will find you perfectly recovered, and the better for having been ill. My wife joins with me in condolence and in good wishes for you, William, and George; and may every succeeding year open on you all with increasing felicity.

The writer of the above letter was the *Rev. John Calder*, D. D., a native of Aberdeen, and a very learned scholar. In the meridian of life he was warmly patronised by the Duke of Northumberland, with whom he was for some time domesticated at Alnwick Castle, and in the Metropolis, as private literary secretary. He was bred to the Dissenting ministry, and had for some time the care of the library founded by Dr. Williams in Redcross-street. He had also a meeting-house near the Tower, but had long declined the office of a teacher, and had become a warm admirer of the doctrinal system then pursued in Essex-street. When the new

edition of Chambers's Cyclopædia was undertaken by the booksellers in 1776, Dr. Calder was a candidate for the appointment of editor and general superintendant, which with so much propriety and success was subsequently filled by the very learned and indefatigable Dr. Rees. For that work Dr. Calder had drawn up several new articles, some of which, the first of them in particular, having been deemed too voluminous by some of the literati to whose judgment the proprietors submitted them, an altercation ensued, and the intended connexion was dissolved. During his residence at Northumberland House he formed an intimacy with Dr. Percy, the late venerable Bishop of Dromore, from whom he received the notes which that learned prelate had collected for illustrating the Tatler, Spectator, and Guardian. These were afterwards used in the various editions of those respective works, more particularly in the Tatler, 6 vols. small 8vo., 1786, published by Mr. Nichols, in which the Annotator, wherever mentioned, designates Dr. Calder. In 1789 he translated, from the French, Courayer's "Declaration of his last Sentiments on the different Doctrines of Religion;" to which was prefixed an account of Courayer, which furnished an article for Dr. Towers, in the fourth volume of the "Biographia Britannica;" and to the same volume Dr. Calder contributed the Life of William Courten.

Dr. Calder filled the honourable situation of one of the assessors of Marischal College, New Aberdeen, where he had received his education. On the 24th of January, 1789, he married to his second wife, Martha Huddleston Green, the only sister of the late John Green, Esq., of Croydon. Dr. Calder passed his time chiefly in literary retirement, surrounded by a large and valuable collection of books, principally classical and numismatic, which he enjoyed almost to the last day of his existence, never being fatigued by reading. He had also a most capital cabinet of Greek and Roman coins, judiciously arranged by himself, and which to him was a perpetual source of amusement. He died on the 10th of June, 1815.—*Gentleman's Magazine.*

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Barton-upon-Humber. First show 14th July (*Sec.* C. Ball.)
Botanic (Royal), June 9, 30.
Brigg, July 7th, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
Caledonian (Inverleith Row), Edinburgh, June 3, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, June 15, Aug. 26.
Clapham, July 8, Sept. 11.
Chiswick, June 12, July 10.
Colchester and East Essex, June 23, at Mr. J. Taylor's, West Lodge, Lexdon Road; Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Derby, Aug. 4.
Durham, June 16, Sept. 8.
Forfarshire (Eastern), June 9 (Forfar); July 21 (Brechin); Sept. 15 (Arbroath).
Guildford, June 16 (Millmead House).
Hampshire, July 1 (Winchester), Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hampton Wick, July 1. (*Sec.* Mr. B. Regester.)
Hexham, Sept. 15, 16.
Hull, June 24, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), June 24, Sept. 9.
Lewes Grand National, July 14 and 15.
Lincoln, July 27, Sept. 14.
Liverpool, June 24, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), June 8†, 22, July 13†, 27, Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Maidstone. Fete. June 24. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), July 9, Sept. 10.
Newbury, June 18, Sept. 3.
North London, Sept. 14; Nov. 23, Chrysanthemum.
Northampton, June 29, Rose and Pink; July 27, Carnation; Sept. 27, Dahlia.
Oxfordshire (Royal), June 23; July 29; Sept. 23. (*Secs.*, C. Tawney, and W. Undershell, Esqrs.)
Peebleshire, July 13th, Sept. 14th. (*Sec.*, J. Stirling.)
Scottish Pansy (Glasgow), June 9.
South Devon Botanical and Horticultural, July 13; Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), June 17†, 23, July 15†, 21, Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
Staines, June 9.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, June 11, Aug. 6, Sept. 17.
Whitehaven, July 9, Pinks; Sept. 17, Dahlias.

POULTRY SHOWS.

Agricultural Society (Royal), Lewes, July 12.
Bath and West of England (Taunton), June 9, 10, and 11.
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).
Cheltenham Monster Show, June 3. (*Secretaries*, Messrs. Jessop, Cheltenham.)

† For seedlings only.

HARDY FRUITS.

This has been a somewhat singular, but by no means bad, spring as to fruit blossoms; and from what we can learn in these parts, fruits in general will be abundant. Nature herself has shown us the use of retardation; never before did we observe fruits blossom so late. Apples here, May 20th, are but just in full blossom; we have known them as early as the last week of April. Peaches here were retarded by all possible means, but when they did expand, it was amazing to observe the speed with which the processes of unfolding, setting, and casting the decaying corolla were carried out. And what does all this point to? Why to the immense importance of securing an advancing ground warmth, before permitting any high degree of excitement in the branches. This grand principle lies at the bottom of all successful forcing, and we would beg of our younger readers in the gardening way—those who are pushing us of the whitened chin gradually off our stools—to secure a strong impression of this in their minds. Strong, we repeat, for it is a bad practice to allow mere speculative ideas, or crude hypotheses, an equal position in the mind with great and well-established facts. A peep into a clever and well-arranged cranium would present as agreeable an aspect as a well-arranged library; no mixtures of theology and dramatic matters; no jurisprudential tomes exhibiting their dry faces amongst poetry and German mysticisms; but all in their classes.

Peaches.—Neglect in these, during a month from this

period, will be fatal to their welfare the whole summer, and not cease even then. What is the use of men making such a hubbub in the spring about the wood being badly ripened, when the remedy lies in their own hands? If they are short of labour, why then their employer is to blame, and this is a most pitiable case. Those who reduce their garden staff to the minimum point during May, June, and July, little know what a loss must accrue to themselves ultimately. It has before been urged in The Cottage Gardener, that every shoot not required for future bearing should be taken away before the period when the ripening of the wood commences, say by Midsummer, although our thinning will be completed by the end of the first week in June. There will, probably, be a very full crop of peaches, nectarines, and apricots, this summer. As for those at Oulton, never could there be better evidence of the beneficial influence of the retarding principle, as well as of the protecting, for every shoot is dotted with fruit, not an inch apart, from the very bole of the trees to their extremities, and we challange any one to find one whole brick lost within the area of the branches of any one tree on a wall 240 feet in length.

Some remarks on the protecting of fruit-trees, which appeared in a contemporary paper lately, were at once amusing and annoying, if such be possible. It stated that it was hoped a partial crop of peaches and nectarines would be secured, as straw coverings were proved to be highly beneficial. Strange, indeed, that we should own the discovery to the Middlesex gentlemen in the year 1852. If our worthy neighbours will tax their memories, they will perchance remember that this practice has been made patent through the medium of the little Cottage Gardener for some three or four years; aye, and the recommendation persisted in midst adverse opinions from men who ought to have known better. What though crops of fruit have occasionally been obtained by leaving tender trees to the mercy of the elements, is that a conclusive proof that protection is an evil? Or that coverings, in some cases, should have actually destroyed crops; what of that? There is a use and abuse in this, as in most other things. Although confessedly strong advocates for retarding and protecting, we could undertake to spoil any man's crop by such means. But why straw screens, when canvass can be had so reasonable? It will cost just fifteen-pence per lineal yard of walling, for canvass which will last seven years at least, if applied to no other use; or, in other words, about two-pence per lineal yard annually. Will any man for shame own that his trees are so bad as not to pay for this? Walls are expensive things, and when built something more than a mere boundary division is expected. As for using nets, why not import some monstrous kind of spider from the antipodes to weave a web to cover the walls? We have no faith in nets, or even in bunting—they still leave something to be desired.

And now to the treatment of peaches through June. Let every surplus shoot be disbudded; but, as before observed, where any doubts exist, give the shoot the "benefit of the act" by pinching it; by the end of July its fate will be determinable. Let the fruit be gone over once a week through June, and at every time let a few be thinned away, provided they are set too thick. As to *final* distance for *profit*, we should say for strong trees six inches, and for weakly ones nine. Peaches and nectarines for exhibition purposes should not be nearer than a foot apart. All this, however, must be worked out cautiously, remembering the stoning, which comprises the period after the first swelling has ceased, as it were, until the first change for ripening. This is, in general, from the middle of June to the middle of July; during this period many are apt to be cast. The last thinning, therefore, should not be until the beginning of July.

Peaches and nectarines produce shoots termed "robbers;" these are readily known by their tendency to burst into side-shoots during the growing season, or, indeed, by their being much grosser than the bearing wood. All such should have the points pinched off when about six inches in length. This operation should be commenced about the last week in May, and continued through the growing period. This is by far the best means of equalizing the strength of the tree, to which winter or rest-pruning is utterly incompetent, although an auxiliary. Such gross shoots will soon shoot again, and produce very strong side-shoots, which will in due time require pinching also, and, indeed, disbudding, simply reserving one or more for extension's sake. And now cleanliness in the wood is the grand point; not an insect may be permitted which can be destroyed.

Pears and *plums* will require close attention through June, as to disbudding, pinching, &c. All succulent or luxuriant shoots may be stripped away as produced, and much of the young spray which rambles too freely pinched betimes. Now all this fuss or trouble, call it what we may, arises from improper planting; that is to say, planting in soils too deep or too rich. Those, who long since commenced our *platform mode* of planting, will by this time have seen the benefit of keeping the roots under proper control; good crops and economy of labour are the sure result. We have, however, so to shape our advices as to meet existing cases; but we apprehend the time will come, when people will save themselves much trouble over these things; when they will, on a retrospection, wonder how it was they could so long persist in such unreasonable practices.

Pears are so heavily laden with fruit, that they will require thinning, like peaches and apricots; we never before had such enormous crops. These must be thinned at twice; the first thinning in the first week of June, if possible, and another about Midsummer. Indeed, it will be well to do it at thrice. The first will consist in thinning the heavy clusters; where four or five are swelling, reduce them to two or three. In the last thinning, what is considered a fair crop must be left, and we should say, that in order to obtain flavour and size, they should *not* be nearer than three inches. This, of course, refers to *trained* pears for prime table *purposes*. It is seldom that plums require thinning—at least the more choice kinds; however, it may be observed, that these, or indeed any other kind of fruit in which the highest amount of flavour is required, are much improved by thinning, when too thickly set. *Apricots*, too, need and deserve particular attention. Of course they have been lightly looked over already, for tart purposes; they must still be looked to, thinning progressively, for they are treacherous things. They may be set out, in the beginning of June, to about two three inches apart, and towards the end of stoning time, say the early part of July, they should be reduced to about four inches. The trees must be carefully picked over for the caterpillar in the beginning of June, and all robbers and breast wood pinched when two or three inches long. R. Errington.

HORTICULTURAL EXHIBITION, REGENT'S PARK.—May 19th.

The Botanical Society have chosen the best day in the week, Wednesday, for their exhibitions at their beautifully laid out garden in the Regent's Park. The fourth commandment is so far respected by that arrangement, that gardeners, their assistants, and van-drivers, who were up most part of the previous night, fagged and worn out by the cares, fears, and anxieties of the day itself, take home their contributions the same evening, sup, grumble at the judges, and go to bed, get up

next "ray of dawn," and arrange their plants without encroaching on the Sabbath, as they are compelled to do after every Saturday's exhibition of the Horticultural Society at Chiswick.

They say a poacher makes the best game-keeper; but I doubt it. The meaning must be—that he who knows the private working of a concern, although he might not be able to work it himself, ought to be the best judge, or, at least, a good judge of its proficiency or merit. Going upon this scent, the first thing which struck me as most remarkable at this show, was the great numbers in the "miscellaneous" department. It would certainly seem very harsh to say to an exhibitor at the outer gate—"You shall not come in here with such stuff as that;" be it known, therefore, to people far off in the country, that these great shows create as much interest round London as a "queen's day," or when Her Majesty appears in public. Everybody wants to see the show, but everybody cannot, or will not, pay the fiddler if he could. But if he brings in anything at all creditable in the plant way, he becomes an exhibitor, and, as such, is entitled to a pass, or free ticket, to see the show. Hence it is that odds and ends, middlings and tailings, find such free access to the miscellaneous department of a London show; and hence, too, that it would be easier for the judges to thrash barley the whole day by the hand-flail, than determine the relative merits of the "entries" in this part of the exhibition. One man brings in two *Caperdollies*, the only difference between them being that they are both alike. Another man neglects to water his *Stockadoos*, and their leaves droop or prick up their ears in the agonies of death, and sure enough they ought to pass off for *something new*. A third, at the eleventh hour, finds out that a turnip radish is no radish at all, but a *new genus*, and he, too, must be as far in as any of the rest, and so on they go to the end of the chapter. I would clap on such "a stinger," that would make this a chapter of accidents.

The first note I entered was on the Orchids, for I never saw such a sight in my life. The whole of one side of the grand stand was covered with them, in two rows; and out of the whole you could not pick more than half-a-dozen that were not full-grown specimens. The competition was as closely contested as the specimens were well-grown. Mrs. Lawrence, who carried off the first prize, did so only by half-a-neck. I recollect the day when her rival, J. H. Schröder, Esq., could only muster for the small collections; and if he goes on at the same rate for another season or so, the medal-baskets at Ealing Park will not feel so heavy as they have done for some years. Indeed, were it not for three or four plants in the back row of the second collection, Number One would have come in second. Of those three or four, one was *Vanda teres*. This most beautiful flower, and the flower of that genus, barring *Cœrulea*, is an unfortunate plant after all; the habit is so bad, that you cannot make it appear as if in luxuriant growth, though it be grown ever so well; while *Sobralia macrantha*, with an equally bad habit of growing too far from home, is always a healthy-looking subject. I never saw a closer-grown specimen of it before, with so many flowers open at one time. There was another large plant of it in another collection, equally well grown, but with only one single blossom open that day, so that for exhibitions this beautiful flower is as uncertain as an April shower, while *Dendrobium nobile* and *cœrulescens* can hardly be caught amiss. The same with the two *Phalænopsis amabile* and *grandiflora*, they are in bloom almost all the year round. *Phalænopsis Lobii* was the newest plant among them. It will never be quite so large as *amabile*, I fear; but it will be more beautiful, owing to the rich reddish purple of the lip. *Anguloa Clowesii* is a noble bloom, and of the same colour all over as the old double yellow tulip. *Anguloa Ruckerii*, with flowers of equal size and substance, is not so rich in colour, being a brown coppery tint, what they call *cupreum*. *Lælia majalis*, a hardy Alpine orchid, which one seldom sees at an exhibition, was there, with one flower open, and that one of the gayest of the family. The old *Dendrobium pulchellum* was as full of flower as a new cineraria. *D. Dalhousianum*, with a rich yellow-ground colour, has a large, rich, purple blotch on each side of the flower, looking as if two patches of rich velvet were laid on the surface; but I think, for a lady's flower, *D. moniliforme* was the gayest of this gay assemblage. The flowers come from naked shoots, like those of *nobile*, and they are of the same form, but larger, and the colour a lively, rich, red-purple, all over very nearly. *Cattleya Mossiæ*, *Skinnerii*, and *intermedia*, always look full and rich, and are easy to grow and flower; not so, however, the old butterfly plant, *Oncidium papilio* and *Epidendrum Skinnerii*; but two of the former, and one of the latter, were at this show, but not nearly so good as we have seen them. Fifteen years ago, you could see large masses of the Spanish Main Butterfly at every exhibition. Some years afterwards it was nearly out of cultivation, and now they have found out the way to grow it well again. At this exhibition, the Royal children noticed the butterflies more than any in the tent. Messrs. Wray sent up from Cheltenham, eight or nine years ago, better examples of the lovely *E. Skinnerii* than any that has been grown, or, at least, exhibited from near London. It was grown in nothing but little bits of sticks, put together like a rook's nest. The most difficult to grow and flower well, *Lælia cinnabarina*, was never seen in such good order as at this show in Mr. Schröder's collection. It was the best example of good gardening at the exhibition. Its long wavy spikes, covered with flowers of a colour which no other orchid produces, except, perhaps, *Epidendrum aurantiacum*—the very colour of the yolk of an egg. The Yellow Epidendrum itself was better here than was ever exhibited in my time. *Trichophilia tortilis*, a very curious thing, was a dense mass, covered all over with flowers; but *T. coccinea*, a beautiful thing by the way, is sadly named; it ought to be *cupreum* or *fuscum*, in Latin, and *muddley*, in English. There is no decided colour in it, certainly not a *coccinea* (scarlet) colour. The Cow's-horns orchid from Honduras, *Schomburgkia tibicinis*, was there. Gathered flowers of this look very beautiful, but they make no show on the plant, being so awkwardly produced. Just think of a fishing-rod growing out of a cow's-horn, the small end bent down with the weight of the flowers, so that they all droop as if they were dying, and you have this orchid to the letter. *Odontoglossum citrosmum*, *Bolbophyllum Henshalli*, and *Zygopetalum crinitum*, are real gems, which new beginners need not fear to tackle with. Then, for the curious, what can surpass the Lady's Slipper, with the fastening of a sandal hanging down a long way from the legs; they call this *Cypripedium caudatum*. Then *Acineta Humboldti*, pushing down its flower-spikes through the bottom of its nest, putting you in mind, as it were, of a second thought of nature, after a trial or two at making *Stanhopeas*. This second thought led the botanicals on the wrong scent for years as to which were or were not *Stanhopeas* or *Acinetas*.

Time fails, and space gives warning that I must not go on so, although, if I had my own way, I should like to describe Vandas, Aerides, Phaius, Saccolabs, Burlingtons, Calanths, Oncids, and all the rest of them, after my own fashion, but I shall stop now at Oncid; regretting the absence of the large masses of *Oncidium lanceanum* we used to see, but perhaps it was too soon for them, although we had one nice little plant of it in good bloom, and also regretting that I was much disappointed with *Lacæna bicolor*, which I never saw in such good condition before.

On the turn at one end of the stand, were the best plants I have yet seen of all those dwarf gems represented by *Anæctochilus*, which they grow in pots in nothing but damp moss, and the pots are always kept under bell-glasses, so as to keep the air as still and damp about them as they were accustomed to in the low swamps of their native homes; and at the other end was a giant, also enclosed by a tall glass cap, with leaves almost as beautiful as those of the gem-bearers themselves. This is a new Vinewort, from Japan; I believe it was sent by the Messrs. Rollinson, and is a strong and apparently fast-growing stove climber, which ought to be planted out in a shaded part of a stove or orchid-house, so that the sun could not reach them to fade the beauty of the markings on the leaves; it is called *Cissus marmorea discolor*, or *variegata*. Along with this, was a curiosity called *Saurauja cauliflora*, a Dilleniad, whose second name explains the meaning of cauliflower, which meaning, very probably, not one out of a thousand knows anything of; but let us see how it tells on this curiosity. It was a tall standard-like plant, with a head of long leathery leaves, so common in this order; the stem all the way up was not thicker than the handle of a strong umbrella, quite straight, and as smooth as a May-pole; here and there, from the surface of the pot up to the fine head of leaves, came forth little clusters of pale white flowers, not unlike some kind of a large *Andromeda*. Now, *caulis* is the book-name for the stem of a plant or tree; and when flowers come out of the stem like this, they call it stem-flowering, or *cauliflora;* and our cabbage-wort, the cauliflower, a stem running into "the best flower in the garden," is a mongrel word, half Latin and half English. If you think the first or generic name of this curious tree a mongrel too, which you cannot well pronounce, say it as a foreigner would, and you will be all right—*Soruia*, putting a strong accent on the *u*.

My next door friend, Mr. Jackson, of Kingston, sent the ghost plant which I tried to describe last week—*Ataccia cristata*. Now what is the meaning of this name, think you? for every name has some meaning or another. *Cristata* everybody knows to mean crested, or formed like a coxcomb, and the crest of this plant we must suppose to be the large bracts or involucre at the back of the umbel of black flowers. The first name, *Ataccia*, is the puzzle, but let us see. In the marshy swamps of the Malay peninsula, in the Molucca Islands, and in other very hot regions in the east, there are several kinds of a plant called *Tacca* by the natives. These plants have large roots, like gingerworts, or between gingerworts and yams. Now, when the real ghost plant was found, it was as near a species of *Tacca* as could be, but still not a real *Tacca*, and to make a distinction they called it *Not a Tacca*, from *a*, not, and *Tacca*, the old sort.

The next greatest rarity was to see a collection of well-grown *Yellow Rhododendrons*, as they are called; there are only three yellow kinds, and three of a tint between light lilac and French-white. This tint is often seen in the flowers of orchids; otherwise it is unusual. Very likely, when the plants are out in the open air under a strong sun the flowers may have a tinge of yellow to justify the name, but that could not possibly improve them. The best of the three is *Delicata*. The other two have spots or streaks of yellow at the bottom of the upper petals, but *Delicata* is quite pure, and a lovely flower. *Lindleyana* is next best, and *Macranthum* has the most dots in the eye. *Sulphureum* is the best of the real yellow rhododendrons; it is a rich canary yellow all over. The next best is *Aureum superbum*, a deeper yellow than the last, and strongly marked at the bottom of the upper petals, with a still deeper yellow or brown, and the third is *Cupreum* or coppery, very like the more general tint in the Ghent azaleas. Those who can only afford two kinds should buy *sulphureum* and *delicata*. The lot was exhibited by the great rose-grower, Mr. Lane, of Berkhampstead. It may be necessary to state that these yellow rhododendrons are hybrids between the *Arborea* breed and the yellow Chinese *Azalea*. When they were first exhibited in the seedling state by Mr. Smith of Norbiton, seven or eight years ago, there were only two kinds, I think; how the third one came in I cannot say. The lilacy or French-white ones are of a different breed altogether. There was one plant of another rhododendron which must be new to a great number of our readers—a double one, very pretty indeed, the colour a rich shade of lilac all over—this is really well worth having by those especially who force their best rhododendrons and azaleas for spring bloom.

The "lovely azalea," the new one, *Azalea amœna*, from China, was also there, and in much better bloom than at Chiswick. It really is a pretty little dear, and when they come to cross it with such large-flowering azaleas as *coronata* and *triumphans*, two of the finest shades in all the race, what gems of loveliness the offspring must turn out! Indeed, now that they have got them so numerous and so large that they hardly know how to find winter room for one-half of them, anybody may see that there are too many of them of one colour. Look at *optima*, *Broughtonii*, and *picturata* at ten feet distance, and who can make out the one from the other. I cannot, and I can read the smallest print in the "Times" in the *glooming*, or by rushlight, without glasses. Even *Exquisita*, the very best of the lightish cast, has too many leaves to allow the full effect of its exquisiteness to be seen at once, and *Perryana*, a very fine flower of the reddish kind, is still worse than *Exquisita* in the way of hiding its flowers. Such defects or deficiencies must be borne in mind by the cross-breeder when the grandchildren of *amœna* arrive. The first generation may be allowed to go off in the way of experiments, and if the size of the flowers do not come down, breed in-and-in again by using the pollen of *amœna* on the best-coloured seedlings. This breeding in-and-in has been proved to do a great deal of harm in azaleas and rhododendrons, but then see what noble things have also appeared by the same means; at any rate, let us not lose the beautiful tint of *amœna* by any squeamishness, or overreaching philosophy, about which we really know very little indeed that can be depended on. I would throw the die in favour of *coronata* and *triumphans* as mothers, for the pollen of *amœna*. The next gardener you meet would probably prefer *grandis* and *violacea superba*, because they are more purple; but why follow such strains, when the very best among us all know so little of the effect of colour, that we would place *triumphans* and *coronata* side by side on a competition stand, as I have seen once done, drowning all the rest right and left of them, and irresistibly compelling the eye to rest on one corner of the group only; who, then, can wonder at our defects in planting flower-gardens. D. Beaton.

(*To be continued.*)

THOUGHTS ON SUCCESS AND FAILURE AT EXHIBITIONS.

No gardener from the country could have glanced at the unrivalled exhibition at Chiswick, on the 8th, without being *bettered*. He could not avoid a feeling of astonishment creeping over him as he gazed, one after another, on such wondrous specimens of beauty and skill, mingled with delight and satisfaction, that to brothers of the same craft were the public indebted for such a magnificent scene. But this would not be all. Every man naturally is so far a Pope. We have all too much of the spirit of the cock crowing defiance from its own dunghill, as if there was not such another spot in creation. Self-

admiration is one of the greatest enemies to progress; humility and felt-inferiority are the first steps to comparative perfection. Few of us country blue-aproners could view such a sight the other Saturday without a feeling of *down-taking*. This, if somewhat painful, is cheeringly hopeful. The utility of such exhibitions, not only in the Metropolis, but in our provincial towns, is now no matter of debate. It is constantly apparent in the stimulus afforded to increased energy; seen in the yearly improvements at Regent's Park and Chiswick; seen in the stir and friendly rivalry, even among those who do not exhibit; and seen, perhaps most of all, in the industry, good cultivation, and neatness, observable in the cottage gardens in the neighbourhoods where a flourishing society exists.

Yet there must be some drawback to these exhibitions, or why should we find the same plants, year after year, brought by the same exhibitors, the masses of growers, as a whole, being content, or seemingly content to witness, and to be influenced privately by that witnessing, instead of trying to share the honours? Or why, again, should we find at one period, provincial exhibitions highly flourishing, patronized by all the great and the fashionable in the vicinity, and attended on show days by the masses of the middle classes, and no small portion of the fustian jackets; and then, before long, witness these same shows almost deserted; the committee in difficulties; compromises entered into; a sort of living death, and then a final break-up, to be resuscitated again after some years, pass through the same ordeal, and meet with a similar fate? Or why, again, do we find employers of gardeners at one time actively patronizing, then becoming lukewarm, then telling the gardener that they do not mind subscribing, but they would rather drop the exhibiting part? Reasons for all this there must be, and many of these our own experience and observation would enable us to give; but, instead of doing so, I would try and reach a part of the reasons, indirectly, in a few hints to employers, exhibitors, and societies, believing that many of our readers are now more than ever interested in the subject, and that future disappointment and unpleasantness may be avoided by timely consideration.

1st. Gentlemen intending to exhibit, must bear in mind that the subjects to be exhibited must receive every necessary and timely attention, be looked upon, in fact, as the *chief* thing in the gardening establishment, for the welfare of which other things must be secondary. Here is a case: your means are limited, you delight in flowers in pots, and cut flowers in winter and spring. If by their room, or their required condition, as respects temperature, &c., they interfere either with the well-being, or the requisite time of blooming, of your favourite specimens, then you must give up the privilege of many flowers in winter, unless you obtain them from other structures. I, not very long ago, heard a gentleman complain that his geraniums were not so bushy and nice as another person's he mentioned. The first were grown under the shade of vines; the second in a house, near the glass, with a shade only when required, and the necessary temperature at will. The same rule holds with respect to fruit; if various sorts are grown, unless the same temperature suits all, the principal object must have the preference. For instance, fine grapes and peaches may be obtained from one house, but to get *extra* fine fruit for a prize, the interests of either one or the other must be partly sacrificed. And so on with everything else, whether as respects getting a few early vegetables, or a large stock for the flower-garden: there must neither be a cramming to suffocation of specimens, nor a deficiency of due treatment, as respects temperature and ventilation. True, many of the most successful competitors, like you, have very limited means, but they also take care *to limit what they grow*. No present gratification is allowed to interfere with a future effect. Possessing only one or two houses, the wish to have them *always* gay with bloom, and the cramming them for ornamenting flower-gardens and balconies, are some of the greatest drawbacks to the showing of good specimens.

2nd. Where room is limited, and much wanted from it, labour is increased. Wherever plants are grown as supernumeraries, such as in houses appropriated to other purposes, they must be moved whenever the temperature, &c., becomes unsuitable. Wherever this has to take place to any extent the labour is greatly increased. Fine results are often thus obtained; but the labour, trifling in a single plant, becomes burdensome when the moving method is followed as a system. In fact, followed as it is in some places to a great extent, the expense for frequent changes would pretty well pay the interest of erecting suitable structures, where each tribe of plants could be kept to themselves.

3rd. The best of everything intended to be shown must be procured, and procured *early*. Every exhibitor who wishes to stand in the first ranks must get every desirable novelty in his own department as soon as it is out. Getting it after a year or two gives him no chance with those who have preceded him. In all florists' flowers, mere culture will ever rank inferior to superior quality in the flower; though a good thing, badly grown, will, also, most likely be thrown aside by the judges. The gentleman, therefore, who purchases little or nothing, cannot expect that his gardener can do much as an exhibitor. I once heard an employer reproach a gardener, in a crowded exhibition room, "that such-and-such things were so superior to his; why did he not have the same? Sure the garden cost enough." A look, and such a look, was the reply. The gardens being large, *did* cost something for labour. It would not have been prudent, in a servant, there and then to have stated the *pence* spent in purchases for a twelvemonth, as even the vegetable and flower-seeds used had chiefly to be home-saved. In all such cases, and those analagous to it, it is generally best for employers, and gardeners too, to have their exhibitions at home. There may be some exceptions. For instance, 1st. When there are some good, old, valuable plants on the premises, which, when well-grown, always command attention. But for these there must be room and convenience. 2nd. When, by a peculiar arrangement, the gardeners have a personal and pecuniary interest in the plants grown. I was once much struck when told how little money the gardens of the employers of some of the most successful Metropolitan exhibitors cost them. Such an arrangement as that mentioned solved the mystery. The plants, in fact, partly or altogether, were the gardener's property, and recognised as such. It would rarely and seldom suit his purpose to hold such property in a country place; but there is scarcely a gardener worthy of the name, but would strive to leave his employer's place better than he found it; and this he will do by getting a sprig of this, and a cutting of that, from some brother more fortunate than himself, who might again be glad of something in exchange. These matters have their limits. Honourable men do not like to ask, unless they can also give. As it is, I question if any other class do so much, in this *cheap* way, to promote their employer's satisfaction. And unless for their own gratification, it is perfectly disinterested, as not one plant, after it has stood in their employer's premises, can they afterwards lay claim to as theirs, unless a specific agreement was entered into for that purpose.

4th. The plants designed for exhibition must be held sacred. No dear lady's scissors must ever approach them for filling her flower-glass, who, and whatever the company expected. If prepared, nothing should prevent them travelling. I have known cases in point—"Well,

these plants are so beautiful; but Mr. A., and Mrs. B., and others, are coming to-morrow, I cannot bear the idea of having the plants disturbed. I should also like those fine peaches, and those fine bunches of grapes you showed me yesterday. Go to the show though, take anything you like besides: I would not wish you to stop at home on that account. You may always take anything, provided it is not prominently displayed." And thus to exhibit, the gardener must have managed to keep his best things as if covered up with a bushel. He made up his mind to exhibit at home.

5th, and lastly. Even all these things attended to, do not be over-sanguine at first. There are great men already in the field. You must work hard to bring up your lee-way. Few of our readers have the means or the will to get a collection of specimens at once. Most of them, instead of devoting their house to one purpose, use *it*, or it may be *them*, for many purposes. "How much can we get from it?" is a prevailing cry. If only one house, it is not merely a greenhouse, but a vinery, and the great auxiliary to the kitchen and flower-garden. If in these, and somewhat similar circumstances, your gardener does appear at an exhibition table, judge of his means, his circumstances, the labour at his command, as well as the results of the judges' decision. The first are well known to you. If they were known to those who decide, it could not alter their decision. It matters not, though every man's name was placed upon each article he exhibited, the judges must give the highest premium to the best articles. But, considering circumstances, I have often felt that the *honour* of taking a second and third prize was equal to that of him who took the first. The public know nothing of this; the employers do; and a smile of approbation from them is the best incentive to increased effort. It is quite a pleasure to hear some gentlemen talk of what their gardeners do, with the means at their disposal. I lately saw a place from whence, at a country show, a gardener took a number of prizes, and it would have puzzled many to know where he took the plants from, or where he was to put them when he brought them home. Difficulties of position only whet the ingenuity of such men; a damper from an employer is the best blunting instrument. The matter has so grown, that I must conclude by saying a few words to young exhibitors another time. R. Fish.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.

FLORISTS' FLOWERS.

The exhibition of florists' flowers was got up in excellent condition, and reflected great credit upon the exhibitors. The day was fine throughout; the company numerous; the music pleasant; altogether it was a treat of no ordinary character, and I and friend Mr. Beaton enjoyed it much, as, indeed, every one present seemed to do. The exhibition was honoured by a private visit of Her Majesty the Queen, attended by H. R. H. Prince Albert and several of the royal family, the Duchess of Cambridge, and the Princess Mary. They all seemed much gratified with the lovely objects spread out for enjoyment in the various tents. With these few preliminary remarks, I proceed to give a brief account of the most interesting *florists' flowers* exhibited on that occasion, leaving the rest for Mr. Beaton to do justice to in his pleasant style.

Pelargoniums.—These were well grown, finely bloomed, and highly coloured. I shall not attempt to enumerate all the kinds, nor the medals that were awarded. Such information is no doubt gratifying to the exhibitor, but is not generally interesting to the public. The grand point is to know the names of the best varieties, and such a selection was made by myself on the spot as will, I think, be useful as a guide to purchasers of these plants. They are as follows:

Show Varieties, not noticed at Chiswick.—*Incomparable* (*Beck's*), a high-coloured, fine variety. *Arethusa* (*Beck's*), a light variety, fine form. *Glowworm*, rich and showy. *Purpurea*, dark, very good. *Salamander*, a lively red. *Nonsuch*, light, with rich dark spots. *Prince of Orange*, bright scarlet. *Alonzo*, rich purple, fine form. *Ocellatum*, curiously spotted. *Mont Blanc*, a good white.

Fancy Varieties.—*Queen Superb*, light. *Alboni*, rose. *Madame Meillez*, dark. *Modesta*, rose. *Hero of Surrey*, black and white. *Casolanii*, light. *Mignon*, dark. *Duchess d'Aumale*, light. *Empress*, dark. *Carlotta Grisi*, light.

These were all in fine bloom, and are worthy of being in every collection. If purchasers are desirous of having good varieties, they will not be wrong in procuring the above, in conjunction with those noticed at Chiswick, not forgetting, above all, *Hoyle's Magnet*, which appeared here again in excellent order.

In seedlings, there were none that took prizes; but for useful purposes and general ornament, *Basilisk*, a show variety, was exhibited by Mr. Hoyle. This is a bright scarlet, intense in colour, with large trusses and flowers; but its fault is, that the petals incline to turn backwards, a fatal objection with the judges. *Foster's National* is a promising variety, with rich dark upper petals, edged with crimson, lower petals deep rose, shading off to purple tint; medium truss. This variety was scarcely in bloom. The rule that three blooms should be perfectly open was against it, but it will be seen again, and will, when in good order, take a high rank even amongst the best.

Amongst *seedling* fancy varieties, Ayres's *Remarkable* will be found attractive, though not up to the mark in a florist's eye, the lower petals being rather flimsy; it has large trusses, and colour much brighter than *Alboni*. A variety named *Victrix*, from the same, had some finely-shaped flowers upon it, and narrowly escaped a prize, the trusses being rather small. When better grown it will take a high rank.

Roses.—These were, if possible, in finer condition than at Chiswick. The gem of the whole being *Coup d' Hebe*, hybrid Bourbon, from Lane & Sons, Berkhampstead. The following are additions to those noticed at Chiswick: —*Aubernon*, deep rose; *La Reine*, purplish crimson; *Viscomtesse de Cazes*, this, though a loose-petalled rose, is very handsome on account of its colour, a rich yellow fawn, and size; *Claude Lorraine*, deep rose; *Bougere*, the pale primrose, very good, *Great Western*, fine crimson; *Velours episcopal*, dark crimson; *Augustine Mouschelet*, crimson; *Odorata*, Tea, light blush; *Princess Marie*, rosy flesh; *Taglioni*, pure white, very large; *Paul Joseph*, nearly black; *armosa*, pale rose, very double; *Juno*, an uncommonly large rose, but spoiled by carriage. There was a basket of small rose-plants exhibited to shew the good qualities of the *Celine* stock; they had been budded late in the summer of last year, placed in a gentle heat early this spring, and were on this occasion plants eighteen inches high, with the finest flowers imaginable upon them. *The Celine rose*, it appears, is excellent for stocks to bud upon, rivalling in that respect the *Manetti*. For roses in pots indeed anything is better than the coarse-growing, sucker-producing, wild rose of the hedges, and I am glad to record another good variety for the purpose.

Cinerarias.—The collection of these charming spring flowers were in excellent condition, and more numerous than usual. The judges very properly gave the prizes to small, bushy, well-formed plants, in preference to such as were deficient in foliage with heads of flowers down to pot edge. The same kinds here were the best as I noticed at Chiswick.

Seedlings blooming first time.—Only one had a prize, viz:—Henderson's *Lord Stamford*, blue disc, surrounded with pure white, violet-purple rather broad edge, fine form and substance, habit good, a free bloomer with large trusses. Henderson's *Picturata*, a pleasing, showy variety, with slightly-cupped flowers, disc grey, white around it, and broadly edged with bright crimson, habit excellent, trusses large and even, a strikingly handsome variety for the greenhouse. *Lady Englon*, this promises well, but was not sufficiently expanded; I think it is worth sending again.

Pansies.—These fine flowers were exhibited in the usual way, and were in excellent condition, but I consider showing them in pots far more effective, and certainly more attractive.

Seedlings.—Mr. Turner, of Slough, sent his seedling, *Sir John Cathcart* (described in the account of the Chiswick Show) in excellent order, fully keeping up its character; a prize was awarded to it. Also his fine seedling, *National*, a light variety, with good properties. In the collections, the following were noted as good varieties:—*Elegant*, *Rainbow* (Hall's), *Ophelia*, *Duke of Perth*, *Blanda*, *Great Britain*, *Antonia*, and *Lady Emily*.

Mr. Epps, nurseryman at Maidstone, had two *seedling Heaths*, of considerable merit. They belong to the tricoloured species. One was named *Erica tricolor Eppsi;* it is a fine variety, with short, stout, tubular-shaped flowers, of a bright scarlet colour towards the base, shading off to white, with the limb tipped with green. It produces large trusses, and flowers freely. The other was named *E. tricolor splendida*, much like the first, but produces still larger trusses, but not of quite such fine distinct colours. Both are worthy of extensive cultivation.

There was a seedling *Azalea Indica*, named *Criterion*, of good form, the colour white ground, thickly striped with pink, sent by Mr. Ivery, of Peckham. It will be a favourite when brought into general notice.

Seedling Fuchsias.—There were only two exhibited, both from that celebrated raiser Mr. Batten, and both had considerable merit; the best, however, was named *Bank's Glory*, habit good, sepals crimson, well-reflexed, and broad; corolla large, beautifully cupped, and of a rich purple. The other was named *Miranda;* it had, also, reflexed sepals, and a beautiful purple corolla, but was rather deficient in size; to make amends for that slight defect, it is a very abundant bloomer.

T. APPLEBY.

CULTURE OF ROSES IN POTS FOR EXHIBITION.

(*Continued from page* 130.)

Winter Treatment.—Though the Metropolitan societies do not have roses in pots at their autumnal exhibitions, yet there is no reason why they should be interdicted; and we are aware that many of the provincial societies do encourage their being shown even as late as September, and with good reason too, for a fine well-grown and freely-bloomed rose-tree in a pot is quite as handsome an object then as in the earlier months of the year. To attain that object in the greatest perfection, the following points of culture and choice of kinds will be necessary to attend to and put in practice:—

Selection of varieties to bloom in pots during the later periods of the year.—There is such an astonishing variety amongst roses, that there is no difficulty in choosing kinds that may, with judicious management, be brought to flower from February to December. That being the case, there is, of course, the less difficulty in choosing such as will bloom in August and September. For these months the autumnal-flowering varieties must be taken. The *hybrid perpetuals* are a numerous class, and may be drawn upon largely for that purpose. Also some few of the *Bourbons*, such as *La Reine*, *Paul Joseph*, *Madame Angeline*, and other free bloomers; also some *Noisettes*, for instance, *Fellemberg*, *Aimée Vibert*, and *Euphrosyne*. Then the *Chinese* and *Tea-scented* classes furnish numerous varieties that bloom beautifully in the autumn. The cultivator may, then, with these brief hints, easily make a selection of suitable kinds for this purpose.

Culture.—Though the time for treating roses in pots to bloom in the autumn extends over the summer months, yet the culture is, as it were, a winter treatment. The plants should be moderate sized in February, and should then be repotted and kept as backward as possible, by placing them out of the influence of the heat. This may be effected by placing them either behind a north wall, or by shading during the day with hoops and mats. Prune them late, and as soon as the first buds appear nip them off. When they do begin to grow, keep them *growing as slowly as possible*, and do not allow them to produce any flower-buds till the middle of July for August, and till the middle of August for September. Put in practice the precepts laid down in former essays, with regard to training, watering, &c., and be careful to keep down insects and mildew. When the roses begin to open, remove them into a more light and airy situation, shading them constantly from bright sunshine and heavy rains. A greenhouse would be a good situation for them, if well-aired, and properly shaded, and plentiful supplies of water given to them. All these points of culture being duly attended to, the cultivator will be able to produce at the exhibition tent very creditable specimens of his skill in producing roses in pots during the latter months of the year. After having succeeded the first year, the practice of retarding the roses in pots, and even the habit of producing the blooms at that season, will become more easy. It is a well-known fact that in plants, either by forcing early or retarding their season, a habit is induced to bear early or late, as the case may be: hence it is desirable to keep the plants so treated for several years to blossom, or bear fruit, at a season they have, by previous management, been brought to. This principle applies very generally, not only to roses, but also to all kinds of blossom-bearing trees, such as vines, peaches, cherries, &c. Exactly the same process is followed as in the case of roses, by all good gardeners; a vine, a peach, a cherry, that has been either forced to bloom early, or retarded late, should be kept to its season, and will then break its buds and blossoms and bear fruit with greater facility at the season it has been brought up to, than if it had never been so treated. Therefore, such roses as have been once, or oftener, treated so as to bring them into flower at a late season of the year, should be retained afterwards especially for the same season and purpose. It is true they will not last for ever, but will in time, with the best management, grow old, cankery, and feeble. As soon as this is perceived or feared, bring up a new generation, and treat them in a similar manner, to bring them into the same habit. The old plants may be planted out in the beds or borders as soon as they have lost their leaves, taking care to untwist their roots, and thread them out on every side of the stem, pruning the branches in severely, and treating them well in every other respect. They will soon recruit their strength, and will bloom very freely. We are always unwilling to throw away a rose-tree, if it is alive at all, especially such kinds as are recommended to be grown in pots.

We have recommended roses in pots to be either on their own roots, or worked upon very low stocks; long naked stems we consider very objectionable to be generally used, yet, for the sake of variety, a few might be

potted at the right season, standard height, and they would have a fine effect as a back ground on a stage, or to be set on the ground. The roses are then brought close to the eye, and can be examined and viewed with more facility. We lately saw at a greenhouse belonging to Mr. Warner, of Hoddesden, a fine example of a standard rose in a pot, or rather in a slate box, about a foot across. The stem was about four feet high, and the head perhaps a foot more, and as much through. Upon it we counted forty perfect roses. It was a hybrid perpetual, named *Aubernon*, and was certainly a beautiful object standing amongst other plants, with its head of beautiful blossoms above them. T. Appleby.

PEAS FOR A LATE CROP.

It does not necessarily follow that the situation which produces the earliest peas is the one that continues to supply the same to a late period; on the contrary, a warm dry soil, which is so useful as a preservative in winter, when the early crop is progressing, is not at all likely to maintain a similar crop in good health during the hot weather of the dog-days. Mildew in its most inveterate form is almost sure to attack them there, and though some little benefit may attend the application of sulphur, that would-be-annihilator of this pernicious parasite, and some good may also be had by copious applications of water, either pure, or an infusion of some enriching matter, still mildew is difficult to contend against at a period when so many circumstances combine to its easy production; that, on the whole, those of our readers who reside in our northern counties, and at times envy their more southern brethren the few days which they beat them in gathering peas, may in many cases console themselves, nay, even exult in the much longer season they are enabled to bring this useful vegetable to maturity. Certain seasons have, certainly, wonderful influences on particular crops, and that of last year was more favourable to peas (in the neighbourhood I write from—Kent) than several preceding ones.

Now, though we cannot recommend any better remedy for this direful disease than sulphur or soot, or both mixed, applied freely and in time to the top, and liberal allowances of liquid-manure to the root, yet we think much may be done in the way of preventing this pest extending its ravages so far, or rather supplying the plant with the means of resisting those attacks, and our readers will easily see, that we point to that healthy vigorous growth, which is neither stunted by an absence of food, nor yet glutted with an overplus of it, as both cases tend to invite disease. For that purpose we prefer a deep mellow garden soil, not too rich, nor yet poor; we would rather have it refreshed by a few weeks' cessation from cropping, than have ground luxuriously enriched by dung immediately after some heavy crop, and, as in this case, to undergo the same routine again. When, therefore, the last crop of peas are considered of importance to deserve especial care, let the best piece of ground the garden possesses be devoted to that crop, not shaded by trees or other objects, but fully exposed, and if even subject to high winds so much the better, for it rarely happens the winds at that period are at all hurtful to vegetation, while they are often beneficial; and the ground should be tilled at least two spits deep, returning, however, the former top soil to the top again. Some stirring ought also to take place at the time of sowing, and more frequently afterwards. This stirring of ground amongst growing roots is not only beneficial by affording the atmosphere access to the soil in contact with the roots, but we also believe that in the process of moving, the ground emits some of those vapours or gases which are so grateful and beneficial to vegetation—as witness the progress made when the hard-caked surface between lettuces or cabbage-worts is broken up, the improvement may almost be perceptible the next day. Now, in a crop so important, and, at the same time, so liable to disease, every known means must be adopted to secure a healthy growth—frequent stirring of the ground, without any encumbering intermediate crop, and the first symptom of disease met by a good dredging of soot or sulphur. Careful watering must also be had recourse to; not deluges with cold spring water, but just a sufficiency of soft water that has been exposed some days to the action of the atmosphere; and when the crop shows symptoms of running away into useless haulm, nipping off the extreme shoots will be of service in checking undue grossness.

All these particulars being attended to, it is likely (we will not say certain) that the crop will be good and useful. So much influence has the season on it, that we are far from sanguine that the most judicious treatment will at all times secure success; however, the above is the most likely way to obtain good peas in October. We advise our gardening friends to try it.

With regard to the kinds most suitable for an autumn crop, it is common to sow one of the best early ones; and we certainly think they are less liable to the evils denoted above than the more tender, yet more choice blue or green varieties. We often sow the old *Charlton*, which is, after all, the parent of most of the vaunted new kinds, if not identically the same. If a blue one be be preferred, try the *Scymitar*. The late *Marrowfats* rarely do well at the very last; besides, their unwieldy bulk is a disqualification when haulm is sure enough to be in abundance.

The first week in July is as late as peas may be sown with any prospect of success, and much earlier in the north of England will be better; usually about the 20th of June is thought there sufficiently late to be useful. We remember, upwards of twenty years ago, seeing a useful crop of peas in November, that were the produce of seed saved and sown that same season. This was in a situation anything but favoured by nature. But, somehow, peas and certain other things fail or succeed from causes over which we have really less control than many of us are willing to admit, and the case above may have been one of the favoured instances in which Nature, in her caprice, thought fit to exercise her kindness in behalf of an unusual crop.

Sundries.—*Peas*, in their various stages of progress, must be properly attended to, and more sown. If the weather and the ground be very dry, it is better to soak the seed a few hours in water before sowing, and also to water the drill at the time, and for a few days afterwards. The same treatment may be observed towards *French beans* and *Scarlet runners*. Apply sticks to the latter proportionate to their wants, and the same to *Peas*. Keep a watchful eye on crops of *Melons* in their various stages; if they be unable to endure the full blaze of sunshine, some slight shading must be adopted, the best of which is slightly colouring the glass with lime and water, or it may be flour and water; the latter, washing off much easier, must be applied inside, the former, adhering more firmly, may be applied outwardly. It is usually removed so gradually as to make its loss but little felt by the plants, but the first rain does not wash it off. Look sedulously for any appearance of disease or insect, try to keep both away by judicious management, rather than trust to the thousand-and-one remedies to cure them. Sow more *Turnips* on some cool piece of ground, and let all other crops be judiciously thinned. *Lettuces* had better be sown on a north border, if the weather be very dry, and likely to remain so. Continue to tie up all that require it, and keep a watchful eye on all other crops now advancing apace, and endeavour to sow, thin, or plant out everything in its proper time; and, if time presses, do not neglect them, even if the

operation should be done in the most rough-handed manner—it is better so than delayed, as Nature helps wonderfully to correct our unskilful or slovenly work; and though neatness in every department cannot be too much insisted on, yet in a kitchen-garden, at the most important time for things growing, do not neglect sowing or planting one crop for the sake of making another more pleasing to look upon by bestowing your attention solely to it. It is true, certain crops, by their importance, deserve a much greater amount of our care than others, and whatever becomes the cultivator's hobby generally fares best; without questioning his choice of objects, we beg to remind him that others have an equal claim to his notice, and he ought not by any means to despise the more humble articles, which form the miscellaneous produce of the kitchen-garden, as, be assured, they will be all wanted in their turn. J. Robson.

ON THE REARING OF PHEASANTS IN A CAPTIVE STATE.

[It had been intended to reserve the following valuable hints, to take their proper place whenever the articles on birds, and the subjects in connexion with them, now appearing in The Cottage Gardener, shall be collected, and reprinted in a volume by themselves. But the season now approaching suggests that it would be selfish to let them lie hidden in a portfolio when they may be useful to, and thankfully perused by many readers, who will soon require to avail themselves of the practical information they contain. It will be a sufficient guarantee of their merit to state that they were kindly supplied by Mr. John Baily, 113, Mount-street, Grosvenor-square.]

"On the subject of aviaries for pheasants I can, perhaps, give you a little information, and spare you some expense, as I have been principally concerned in breeding and rearing many thousands. I dislike anything like a wire pheasantry; since, while it affords no real security against poachers, it is bad for the birds. Our pens, in which there are now (October) from five to six hundred birds, are made of laths about eight feet high; there is no covering at top, as every bird is kept with the wings cut. If there are brambles, bushes, or stunted trees in the pen, so much the better; if not, (as the birds, still retaining a notion of their former—query, *natural*—state, like a little concealment, although now as tame as farm-yard fowls), we place a stout rod or two upright, and against it lay on each side a row of bavins or bundles of any sort of wood, which affords a covert in the hollow left between them. At this time of the year a pen, about fifty yards square will conveniently hold a hundred brace of birds. When the breeding season comes on, they are then separated; a cock and three hens being put into a pen about five yards long by three wide; a hollow is formed in the centre, and filled nearly to a level with loose sand; over this a felled fir-tree is laid, or any other cover, and here the hen lays her eggs, which fall without injury on the soft sand. When the laying is over, the birds are replaced in their original pen. The advantages of this mode of management are two-fold: first, the expense is very trifling; and next, while the birds are in the laying-pens, the winter pen being open, becomes sweet. *It is almost impossible to keep pheasants the year round, on the same ground, without taint;* and where that exists, the young cannot be reared, but 'the gapes' and other diseases carry them off.

"While you are writing on pheasants, any hints may be acceptable, as you can reject or select at pleasure. I give you my authorities, but cannot unfortunately give you the permission to publish names, except my own humble designation.

"Major A——d told me last spring that he had been almost uniformly successful in curing 'the gapes' by these means:—the disease being a gaping, and an effort to remove something offensive from the throat, he takes a strong feather, and strips all but the last inch-and-a-half; he inserts it into the throat of the bird, and twists it violently round several times, and then withdraws it rapidly. He has generally found that doing this once cures; if not, he repeats it, almost always with success.

"Another gentleman tells me that he gives pills made of oatmeal and pounded peppercorns, mixed with a little garlic. I am not sure the last will cure the gapes, but I can positively speak of its beneficial effects on pheasant poults when drooping.

"The objections to wire pheasantries are: first, they require painting; next, the birds break their feathers against them; and lastly, when dissatisfied, which will sometimes happen, they attempt to get their heads between the wires, and injure themselves by making their heads and beaks bleed; and this is more important than would appear at first sight. All *gallinaceæ* are more carnivorous than people imagine; and where blood appears, they *will* peck, to the destruction of the sufferers. Thus, if pheasants are in bad health, or are badly fed, *i. e.*, lack something necessary to their well-being, they will, in the moulting season, devour the young and sickly feathers from the backs of their partners, taking the feather for the sake of the young and bleeding end of it. So contagious is this propensity, that if one takes to it in a pen of fifty, unless he is removed all will become to a certain extent cannibals. I last year (1849) bought forty tame pheasants of a gentleman. They were badly packed; and in trampling each other one had his back torn. The rest directly fell upon him, and ate his back to the bone. They devoured each other so that I could only sell eight of them. The rest died, although they had plenty of food before them.

"I am very glad you will have an opportunity of breeding your own fancy pheasants, and believe you will find it a delightful occupation; but I hope your court-yard is not paved. If it is, you must cover it with at least eighteen inches of sand and gravel, and supply them plentifully with grass cut in living turves. It is also an excellent plan to have some lumps of chalk in the pen.

"If you happen to have glebe-land, or a dry hilly field, or a large plot of grass attached to your parsonage, you need not be under any anxiety as to the disposal of your pheasants when they are hatched. But as you will probably get from each hen from sixteen to twenty eggs, it will be well not to incumber yourself with too many. The care of a hundred tame pheasants is the work of a man, or a boy; and I know you are not partial to the latter as poultry-keepers.

"Before I give you any of my ideas respecting young pheasants, I would most strenously object to your feeding the old birds with earth-worms. I know they are very fond of them; and they are equally so of raw meat: but both are alike bad for them. They make them savage, and induce that feeling of cannibalism which I mentioned before. They also tend to make them dissatisfied with their ordinary food; which is an evil: because during a hard frost, for instance, you would be much troubled to get enough for nine pheasants. All live food, such as worms and gentles, should be carefully avoided, except as a last resort. When a bird is pining, dissatisfied, and off his feed, a live worm, or some gentles writhing and twisting about will then sometimes catch his attention and tempt him, and bring about a favourable change.

[Acknowledging the deference justly due to Mr. Baily's great practical experience, I cannot help protesting against the interdict contained in the above paragraph. As I have unhesitatingly caused my own birds to break the *taboo*, I ought openly to state my belief that they were the better, instead of the worse for such indulgences. In truth, it is not easy to follow the excellent rule of supplying them with green turves, without thereby smuggling in what we are here taught to consider as contraband goods.]

"We will suppose the laying season is come. The eggs must be gathered early every morning, and a watch must be kept that they be picked up soon after being laid, or it often happens that one or other of the birds in idleness pecks the shell; the egg runs, all eat of it, and continue the same with every one that falls. If this does not happen, it will sometimes be starred and spoiled. When you have enough to set a hen, and if she be a large one she will cover fifteen, or sometimes seventeen (always an odd number, because no luck attends an even one!), you first set her a day or two on some common eggs, to see that she sits close, and then entrust the pheasant's eggs to her care.

"When the poults are hatched, the hen is put under a rip, or coop, having bars in front (only two), just wide enough to allow easy egress for the poults. The spot is chosen on

nice dry grass. A space is fenced off in front of the rip, with three planks about four feet long by two-and-a-half wide, and covered over with netting. It requires to be shifted every day, and therefore the usual and most convenient way is to fasten each board with three pegs driven into the ground. The poults must be fed with egg boiled hard, and chopped very fine, with dough made of barley or oatmeal (mixed with milk to such consistence, that when thrown on the ground it scatters in small pieces), and ant's eggs. When they are grown larger, and better able to care for themselves, the planks are removed, and the hen being still under the rip, the poults are allowed to run at will. When they have made still further progress, the hen is tethered by the leg to a peg by a string about four feet long, with a short strap at the end, which encircles the hen's leg, and thereby prevents injury—a hole being made at the end of the strap, through which the string passes, forming a ring for the leg. While the hen is tethered, she must still be replaced under the rip every night.

"The general rules are, to keep them on a dry spot; if possible with southern or western aspect; to *feed them frequently*; to *change their water two or three times a day*; and *above all*, TO FEED THEM SOON AFTER DAYBREAK."

[To this it may fairly, and in justice be added, that Mr. Baily's Registered Fountain, of which I have had practical experience, is an excellent apparatus for supplying water to delicate chicks of any kind. The material is pure, it is easily managed, and it is scarcely possible for the foolish little things to drabble themselves in it.] D.

ENEMIES OF BEES.

From the great interest taken on the subject of bees by your correspondent, Mr. H. W. Newman, I am induced to impart for his information, as well as for the "Country Curate," and your other valuable contributors, the following facts—viz., that "earwigs," which are not included in his list enumerated in page 89 of your last number (No. 188), are *bitter enemies* to the poor bees; and for lack of this knowledge I have bought my experience dearly, as I lost a hive last year entirely from placing it next to a rose-tree, and other shrubs, the leaves whereof, by increase in the summer, joined the hackle, and served as a ladder; and on turning up the hive we discovered a colony of those vermin numerous enough to fill a common-sized hat, and of a most enormous size, doubtless owing to their luxuriant feed, as they had consumed all the honey, and many hundreds of bees, which lay on the stone and in the empty combs with their heads eaten off, and many as skeletons, their interior having been devoured also. It is true the stock appeared weak, but I conceive the earwigs are so offensive to the bees that the majority went off to sojourn elsewhere and escape destruction.

Mr. Newman also seems to entertain the opinion that "hornets" are *not* great enemies, because they have not yet been found to attack the hives; but I can assure him I discovered a serious onslaught last summer by two nests of hornets, which infested my mignonette beds near the hives, and *pounced* on the bees whilst taking up the farina from the flowers, and invariably carried them off to their nests. I consequently had both nests found and destroyed *instanter*, but should like to be informed what plan of destruction Mr. Newman adopts when he speaks of their being "much more easily killed than wasps." I presume he must intend his remark to allude only to a *single hornet*, and not a *nest*. The position of them, which is frequently in old thatched roofs, as well as the strength required to suffocate the hornets, render them much more formidable opponents.

I beg to suggest to your readers, that a far more certain and simple way of destroying the *wasp* nest than by the introduction of a gunpowder squib, is by putting in at the mouth a small phial of *spirits of turpentine*, and leaving it to run into the opening, which on being closed up, as in all cases, and returned to in an hour, you will find them all victimized. As I give a premium for all nests found in my district, I am interested in trying divers ways, and find this latter the best. Camphine is equally successful if applied.

I regret to say I never saw, during all my experience, so strong a flight of wasps as the last mild winter has produced. I have counted more than twenty at one time on several of my pear blooms, and of course destroyed all we could; but they were not to be captured by their usual liquid beverage on hanging-up bottles, and I am very sorry to see the public pay such slight attention to the killing of them, which I am eager to recommend, and more urgently now than at a later season, for the reason of the great probability of destroying "breeders."—Verax.

CURE FOR THE WHITE-COMB IN COCHIN-CHINA FOWLS.

The question has been asked, I believe, more than once in The Cottage Gardener, "What causes the whiteness and scurfy appearance so commonly seen in the combs of the male birds of this magnificent breed of fowls, and if there are any means of prevention, or of cure?" The first question I am quite unable to answer; it has been considered by some persons to arise from fever, caused by too many roosting in a small and confined house. This cannot have been the cause either with mine or those of two other persons in this neighbourhood, where not more than one has been kept, and these roosting, or rather sleeping, in a large and airy house, for roost mine will not. Others have attributed it to cold. However, be the cause what it may, it sadly disfigures the birds; for the disease is not confined to the combs only, but spreads itself down the neck both in front and back, and takes off all the feathers as far as it goes, *leaving the stumps*. I saw a bird very lately with his neck and breast entirely stripped of feathers, but the stumps all left, so that no hopes of their return can be entertained till the time of moulting.

Now to the remaining question, How can it be cured? I am happy to say I can reply in a much more satisfactory manner; for a lady friend of mine, who has just returned from India, after a residence of eight years, happened to see my fowls, and told me that the "Kulm Fowl," which I believe is the "Malay," and of which she kept a considerable quantity in India, were subject to the same disease, and that the natives upon discovering it applied *cocoa-nut oil and turmeric*. She strongly advised me to do the same, which I did immediately, and with the most complete success, for it stopped the spreading of the disease at once, and very soon restored the comb to its original colour; but for the return of feathers I fear I must wait till the moulting season. J. H. Payne.

COTTAGE COMFORTS: THE MILCH GOAT, AND ITS FOOD.

BY CUTHBERT W. JOHNSON, ESQ., F.R.S.

(*Continued from page* 140.)

Mr. J. H. Fennell has given an amusing account of the various substances upon which the goat is content to pasture (*Quart. Journal of Agric.* 1847, p. 511)—"When left to graze for themselves," he observes, "goats generally select for food bitter and slightly astringent plants, as the leaves and buds of spurge, hemlock, birch, privet, and bird-cherry, and the tender tops of furze and heath. Theocritus alludes to the eagerness with which they seek the laburnum, and Virgil celebrates that tree for increasing their quantity of milk. Fraurius, who observes that goats are delicate feeders, biting off only the tops of branches, says, 'they most of all love to feed on the bark of the beech-tree, as also on the leaves of shrubs and hedges.' He adds, that those in Arabia do exceedingly love cinnamon, and if you have any cinnamon about you, they will follow you anywhere. Phillips speaks highly of the leaves and young branches of the single-seeded broom (*Spartium monospermum*) as food for goats. Loudon says, that in France, willow leaves, either green or dry, are considered the very best food for them; but their most favourite food appears to be the honeysuckle, hence the French call it *Chèvre-feuille*, or goat's-leaf. Goats are fond of hellebore, and will fatten upon it, although it is poisonous to man. Linnæus states that they will eat of the yew tree with impunity, though horses and cows refuse to do so. The author of 'Campaigns and Cruises in Venezuela' says, goats will browse without injury on the leaves of the

poisonous machineel tree. It is also stated that they will readily eat manufactured tobacco without suffering from its noxious effects. Dr. Macculloch, in a letter to Sir Walter Scott, mentions a he-goat on board ship, whose diet consisted, except on holidays, of pig-tail tobacco, carpenter's chips, and krippered salmon:—'The depredation on the fish,' he says, 'became so serious that we were obliged to hoist them into the shrouds out of his reach. Indeed, I never could discover any thing which the goat would not eat, except oakum, which always puzzled him.' During winter, goats will feed on indifferent hay or straw, furze, heath, thistles, cabbage-leaves, potato-peelings, cold boiled potatoes, old ship biscuits, or, in fact, almost any thing that is presented to them.

"The variety and coarseness of the goat's food," continues Mr. Fennell, "the hardiness of its nature, and the ease with which it accommodates itself to either an out or in-door life, enable the small landed cottager to keep it nearly as well as the farmer. The parishes about Montor, near Lyons, without pasturage or meadows, support nearly 12,000 goats, kept in stables throughout the year, and yielding a produce of more than a million of francs. However closely confined, goats are still very healthy animals, and are excellent live stock for ships; for when the weather is so stormy as to kill geese, ducks, fowls, and almost pigs, goats will continue well and lively; and when no dog can keep the deck for a minute, a goat will skip about with impunity. The goat seems able to bear any climate, and wherever it has been introduced it seems to have rapidly multiplied. Mackinnon, in his 'History of the Falkland Islands,' 1840, observes, that goats are found in one or two islands near West Falkland, and have increased amazingly, for the original stock were only landed a few years ago by a whaler."

The he-goat engenders at a year old. The she-goat can produce when seven months old. She generally yeans two kids.

The manure of the goat is perhaps the most powerful of all our domestic animals. This was shown by M. Boussingault, a celebrated French farmer and chemist, in connection with the nitrogen which they contain. He published a table indicating the quantity of each kind of manure required to replace 100 parts of good farm-yard manure, from which he concludes that to produce the same effect there must be used (*Quar. Jour. Agri.*, 1848, p. 377)

18½	parts of the excrements of the goat.
36	do. sheep.
54	do. horse, and urine mixed.
63½	do. do. of the pig.
73	do. of the solid excrements of the horse.
97½	do. of the mixed excrements of the cow.
125	do. of the solid do.

Such are the chief facts which I have deemed likely to be useful in inducing the extended keeping of the milch goat. It is an animal that, I feel well assured, may be kept with equal advantage by the cottager and the dwellers in large houses. It is useless to compare it with the cow, or to suppose that the goat can supplant it in situations where the cow can be readily kept; but in the absence of pastures, and in places where there is too little food for cows, I feel well convinced that, with ordinary care and attention, and a moderate firmness in overcoming the prejudices of those unaccustomed to the goat (and without these are found in the owner, live stock never are profitable), the value and the comfort of a milch goat are much greater than is commonly known.

The waste produce of a garden is exceedingly useful in the keep of a goat. By them almost every refuse weed, all the cuttings and clearings which are wheeled into the rubbish yard, are carefully picked over and consumed. To them, the trimming of laurels and other evergreens, pea-haulm, and cabbage-stalks, &c., are all grateful variations in their food. In winter, a little sainfoin hay, or a few oats, keeps them in excellent condition. In summer, the mowings of a small grass plot, watered with either common or sewage water, will, with the aid of the refuse garden produce, keep a goat from the end of April until October.

With only a little care, therefore, it is evident that the supply of new milk to a family is within the reach of more householders than is always regarded as possible, and that, to those who will set about it with only ordinary patience and industry, many a little dairy may be comfortably established by those who have no other conveniences for such a purpose than an enclosed yard, or an out-building for a milch goat, and perhaps a plot of grass in a garden to help to find it food.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

DUTCH PITS (*J. E., Liverpool*).—We recollect seeing a good account of the mode of constructing these, to suit various purposes, in the third volume of *The Gardeners' Magazine*. Their chief feature is heating by dung and tan, chiefly by linings, and a tan or dung-bed inside, defending the linings from wet and cold winds, and protecting the glass with straw covers, or mats, surmounted, it would be advisable, with a waterproofed covering. See Mr. Fish's statements last week about pits. In forcing by dung, it is of importance to avoid, by one of the many means resorted to, all access of rank steam from the fermenting material into the atmosphere of the pit. If this is not sufficient, specify your wants, and they will be attended to.

GREENHOUSE (*K. I*).—This matter has received, and will presently receive more attention. At present, we will reply shortly to your questions. 1st. The *proportions*, 27 feet long, 10 feet wide, 6 feet high in front, 9 feet high at back, against a south wall, will answer very well, but will neither be so elegant nor so useful as a span-roofed house of similar dimensions. 2nd. *Expense*.—We have lately mentioned the price of bricks, timber, glass, and iron piping, and the average price per foot for glass and wood complete—we decline just now doing more. The builder thence may form his own deductions easily, and thus judge near enough of the price of any estimate he may get. Locality influences prices so much. A fair price for a good article will be the cheapest in the end. 3rd. If convenient, we would have a *door* in each end, and the front part of the door in a line with the front shelf, or two feet from the front wall. It is always more pleasant to walk through a detached house than to go in and return back again. 4th. As to *arranging the inside;* with 2 feet for a shelf, 2 ft. 9 in. from the ground, or 3 inches below your fruit glass, and 3 feet for a path-way, you will have 5 feet as the base for a stage or platform. The first, with four or five shelves, would be best for stocky, dwarf plants; two shelves or platforms of wood or slate would be best for larger ones; while for specimens to grow from three to five feet high, one level platform, about 2 ft. 9 in. to 3 feet from the ground, would be the best. 5th. It will add to the cheapness, and lessen the danger from breakage, by having *the top lights* fixed, and give air by shutters or windows in the back wall, opening the front sashes, or ventilators in the wall beneath them. Did you, as recently advised, follow this mode, and have strong sash-bars wide apart, and thus save the necessity for having above two or three rafters you would lessen the expense for wood.

YEW-HEDGE (*H. B.*).—The yew-hedge thirty feet high, may, without any harm, be reduced to any height required, and this is a very good time to cut it. Your own proposal to reserve some of the side-shoots, to prevent a formal appearance, is a matter of taste. We care nothing for a hedge which is not perfectly formal in the strictest sense of the word.

TREE MIGNONETTE (*Hortense*).—Your tree mignonette has been in bloom since last Christmas, and now begins to look yellow; pick off every flower and seed-pod; indeed, cut it in as you would a standard rose, and let it produce no more flowers for a long time. We would always reserve our tree mignonette for winter use; and by keeping it growing, without letting it flower all the summer, we would have it as strong as any one could wish. We would now plunge it out of doors, and after two or three stoppings we would repot it about the end of July.

TROPŒOLUM TRICOLORUM AFTER BLOOMING (*Ibid*).—By the time the flowers are over the leaves will turn yellow; you then stop watering, turn the plant out to a shady place to take its chance till all the stems wither, then take a fine meshed sieve and turn the ball into it; this will catch the little tubers, which will be numerous or not, according to the strength of the old one, and your close following our instruction. Never heed what he, she, or they say or practice, you follow THE COTTAGE GARDENER'S advice, and he will owe you as many thanks and more than you owe to any of the writers.

ROSES NEWLY BUDDED (*Jane*).—Here is a general rule for newly budded roses:—all suckers from the roots to be cut as soon as perceived; *not to cut out any* of the side-shoots from the stem the first year after budding, *but never to allow such side-shoots to grow beyond six inches in length*. Another rule is, but it is not absolute, not to allow the first shoot from a bud put in last year, to flower; as soon as the rose-bud is seen, the shoot ought to be stopped, like a *side-shoot*, and the "next break" will form the head and bloom finely. The leaves getting out only on the ends of last year's shoots, "tell tales." Your rose-trees have not been pruned, and the roots are either too strong or very weak. You will have to cut them back by degrees; one or two shoots now, the same a month hence, and so on to the middle of August, without any harm. Some disease has taken the yellow shoots of the Persian rose, have them cut out and the head will soon adjust itself. The suckers from the Boursault will never make stocks, but you can bud on them as they are with advantage, if you use strong-growing sorts to train up with the old Boursaults. Roses come from layers, and as freely as carnations, but the tongue should be on the *upper* side in nine cases out of ten. This keeps the parts from snapping or breaking off in the operation.

NUTT'S HIVES (*J. R. S.*).—Our reason for not recommending Nutt's hives, is because honey is very seldom obtained from them; indeed, only

in a very good season, and even then it is not fine, for the queen *will* deposit her eggs in the side boxes, which takes very much from the purity of the honey. Put your expected swarm into *The improved cottage hive*, or any hive except a Nutt's. A straw hive wants no casing over it. Taylor's Amateur's single bar hive is a good one, but his *eight-bar hive* is a better. It is described at page 198, vol. vii., of The Cottage Gardener.

Chickens with Swollen Eyes (*Barbara*).—Your chickens suffering with swelling and irritation of the eyes must have the roup, and that badly. They should accordingly be treated for roup, and have the head and eyes thoroughly washed and bathed, and should be placed where they can be sheltered from cold and wet.

Keeping Poultry (*F. Y. N.*).—In wishing to know how a farmer may keep poultry to advantage, producing a regular supply of eggs and fat fowls for the market, you have propounded a question which has puzzled (and I fear posed) more experienced heads than mine. Good fowls *abundantly* fed are almost sure to give plenty of eggs, but my experience in producing fowls for the table has never extended beyond getting a supply for our own family, for which the fowls are not fatted, but are caught up the evening before they are wanted, and are found quite fat enough. I believe the most economical plan is to let the food be varied, and given so abundantly as never to let the chickens grow lean, and to kill them before they lose the plumpness of chickens. Liberty to pick from the ricks, I should fancy more beneficial to the fowls than to the rick's owner; and laying and sitting in different outhouses would do for the stock-fowls, but chickens intended for the table would, I think, be better in small inclosures, where they would not have sufficient liberty to make them thin. The correspondent also asks, Whether Cochin-China, Spanish, and Dorking fowls may be kept together? If good, they will decidedly prove more profitable by keeping the different breeds distinct. Anster Bonn.

Tropœolum speciosum.—*E. M.* says:—"I planted a *Tropœolum speciosum* in the autumn of 1848, in an open border up to the house, with a south aspect. It remained unprotected through the winter, and covered a large space on the wall the next summer, with thousands of flowers. I have never touched it since, and every summer it has been the admiration of all who have seen it. The summer before last it must have mounted ten feet high, with dozens of stalks crowded with brilliant flowers, and that year it ripened an abundance of seed. I did not gather them, but this spring I find young plants springing up in the open border on all sides, no doubt from the shed seed. I should add, that I live in a very cold county." We do not know of an instance where this plant has succeeded so well. We should like to know the exact locality and soil.

Calendrinia umbellata (*E. M.*).—This little gem is a perennial in Southern Peru, but little better than a biennial here, or if planted out. It is best used as an annual, and is therefore so called in *The Cottage Gardeners' Dictionary*. Sow in August, plant out next May, and chance it after flowering.

Mr. Green's Azalea (*F. W. T.*)—We wonder at a "man of Leeds" being so impatient. All the world will hear the story when permissible.

Passiflora and Pharbitis (*Rising Sun*).—The *Passiflora Buonapartea* will do very well planted out at the warmest end of your conservatory, and so with the seedling of *Pharbitis limbata*, but the latter would do out-of-doors in summer.

Dielytra eximia (*A Lady*).—Very many thanks; the plant came quite safe through Mr. Appleby, but Mr. Beaton could not ascertain to whom he was indebted for it. Now, however, knowing so far, there will be no "breach of promise" on his part, for if any thing good comes of the cross, he will feel very great pleasure in keeping his word to the letter.

Green Moss in London (*I-forget-my-name*).—The poor men who carry green moss about the streets in London, procure it in damp, shady places, on old walls, or trunks of trees. It will not remain bright green unless it be kept moist, laid on some soil or stones in a shady place. It may be procured in any quantity of J. Goulding, Wallington. He collects it for the nurserymen round London.

Silver Sand (*Northumbrian*).—You may obtain any quantity of silver sand of Mr. Kemp, Old Kent Road, London. Write to him, and he will inform you the conditions of sale.

Wardian-case (*Ibid*).—Nothing will grow for any length of time in a Wardian-case, excepting *Ferns* and *Lycopods*, but you may put in a few flowering-plants when in bloom. *Cacti* do as well as any. They will die soon, and should then be replaced. *Æschynanthes*, and other allied plants that will bear similar treatment, might be hung up to the roof, inside. Also some pumice stone laid in amongst the Ferns, is useful, and looks well, giving a rocky sppearance. This stone is preferable to any other, because of its porosity and lightness.

Azalea Leaves Diseased (*O. P. Q.*).—The disease of spotted leaves on your azalea is nothing uncommon. It prevails extensively this year on orchids and geraniums. The cause is wrapt up in mystery, and, which is worse, the cure also. To prevent it spreading to your other plants, you had better sacrifice the plant at once, for it appears you have done all you can to cure it. If it is a favourite, and you are not willing to destroy it, you may cut it in severely, divesting it of every leaf, shake it out of the pot, reduce the ball to half its size, repot it in fresh soil, (sandy peat, loam and leaf mould, two parts of the first, one of the second, and the same of the last), place it in heat, giving little water till it breaks into fresh foliage; give shade by day, and keep it close till some growth is made, then gradually use it to the sun-light and air, and it will have got rid of the spot fever.

Light-coloured Climbing Rose for Greenhouse (*A Subscriber, Manchester*).—*Paul's Victoria* is a light rose, and would match your red one. If you cannot get it, *Aimee Vibert*, or *White Tea-odorata* would suit you.

Ducks not Laying (*T. O. T.*).—Remove one of the two drakes; give your six ducks a little corn once a day, and let them have their barley-meal mixed with middlings, and given quite warm every morning, until they lay better. Is it possible that your ducks can lay astray?

Chickens Dying (*C. W.*).—It is indeed disheartening to lose so *many* chickens. It would almost seem as if they had eaten something poisonous. If the case were mine, I should be anxious to change their locality entirely, removing them to some other part of the ground. My chickens are kept and fed as recommended in The Cottage Gardener, and there are not above two or three deaths in a season from sickness. Anster Bonn.

Rumpless Fowls.—*A Reader* wishes to know "Why in the various poultry-shows, none of that peculiar breed of fowls called *rumpless* are ever exhibited. They used to be very common in some parts of England, and still more in Germany, but of late years are not often met with. They are *a particularly fine breed* for the table, and their eggs equal in size to any? He would be glad to know where they may be procured? They are literally as they are called, *rumpless*, as well as without any tail feathers."

Great Western Fuchsia (*G. J. J.*).—We are informed that this variety is gone out of culture by nurserymen, therefore we cannot say where you can purchase it.

Pigs (*Duro*).—"The best breed in the country" may be had of Fisher Hobbs, Esq., Boxstead Hall, near Colchester. The price is very high.

A. R. Y.—We are sorry that we cannot accept your offer.

Birmingham Show (*R. B. T.*).—What "birds" do you mean?

The Cottage Gardener (*A New Subscriber*).—The *fourth* and *all* the volumes may now be had through any bookseller. If you do not wish to buy the volume, you will find in No. 97 much about *rhubarb wine*.

Failures in Hatching.—*A New Subscriber* says:—"Having seen many complaints on the bad success of hatching, I think my plan may be acceptable to some of your readers. I prepare the ground by hollowing it out a little, and then take from a quarter of a pound to half a pound of salt and sprinkle the place with it, and work a little into the earth. Then I make the nest with hay and a little straw. The salt produces a moisture which will have the desired effect in dry weather, and will not do any harm should the season prove wet. I may add, that I have never had a reason to complain."

Bees.—"*A Grateful Subscriber*," in the vale of Clwyd, is happy to inform a brother apiarian ("the Country Vicar"), that his plan was tried about ten days since with perfect success, with two boxes, adapted according to Mr. Taylor's window plan, with a doubling-board. The bees took to the nadired box very shortly; but the four-inch hole tempted the little busy-bodies to build downward, instead of availing themselves of the prepared guide-comb. The hive, with an *immense* mass of comb-makers, was adjusted yesterday, side by side with the parent hive, which had been placed over it, without the loss of more than half a dozen bees, and without the slightest confusion, or check of industry. The new comb (already stored) compelled the use of a bell-glass, fearing it might be too weak to bear crushing in with the usual bung, and was at once taken possession of. "A Grateful Subscriber" desires to know how "A Country Vicar" will ensure a succession of youthful queens on his plan? and prevent the possibility of failure from desertion at the end of the season, in case her majesty should be superannuated? Can this be effected, the plan will be admirable. Mr. Taylor's method of collateral hives, and "A Country Curate's" simple and ingenious plan are also adopted in the small apiary with the above, so that they will all have a fair trial." We shall be very obliged by a report of the results.

Cucumbers and Melons (*W. K. H.*).—Good temperatures are 75° by day, 65° by night. In sunshine, they may be 10° hotter without injury. The same temperatures will do for both.

Garden of Herbs (*Simple Doctor*).—It would require several numbers of The Cottage Gardener to give you the culture of "all plants that can assist you;" even a list of them would occupy columns.

White-Comb in Cochin-China Cockerel (*H. M.*).—Mr. Payne's remarks in a previous column to-day meet your case exactly.

Points of Excellence (*G. J. A.*).—We have no permission to give the address you ask for. Any reasonable queries or remarks we shall readily publish.

Gas Ammoniacal Liquor (*I-forget-my-name*).—We cannot find any previous letter addressed to us by you. This subject you will find fully treated of by us in our No. 11, and we have no new facts to communicate. If there is any point not discussed there on which you need information, we shall be glad to hear from you again.

Greenhouse (*An Anxious Beginner*).—It will be probably warm enough for Geraniums, Camellias, and *Mandevillia suaveolens*. We say probably, because it is quite impossible for us to foretell whether your flue will have a good draught. Your compost will do for border-dressing in the autumn, if turned over and mixed once or twice. Your turves will do for manure when rotted with manure. If the materials are in good condition, the compost for potting may be mixed at the time when needed.

Names of Plants (*G. W. H.*).—Yours is *Abutilon striatum*. It is a greenhouse plant, and might do in a room. It grows against a south wall at Winchester, but has not bloomed yet. (*Rhyd-y-Gors*).—*Fuchsia splendens*, or a variety from it; and the Swiss Club Moss, *Lycopodium helveticum*. (*Knowles*).—Your variety of the beech is *Fagus sylvatica cristata*, sometimes called *crispa*.

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WEEKLY CALENDAR.

M D	W D	JUNE 10—16, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
10	TH	Hedge Nettle flowers.	29.720 — 29.642	55—43	N.E.	32	45 a. 3	13 a. 8	1 10	22	0 53	162
11	F	ST. BARNABAS.	29.980 — 29.965	67—48	S.W.	04	45	14	1 26	23	0 41	163
12	S	Trinity Term ends.	29.737 — 29.650	61—56	S.W.	23	44	15	1 43	24	0 29	164
13	SUN	1 SUNDAY AFTER TRINITY.	29.913 — 29.722	67—47	S.W.	04	44	15	2 0	25	0 16	165
14	M	Large Skipper Butterfly seen.	30.061 — 30.036	67—41	S.W.	01	44	16	2 18	26	0 4	166
15	TU	Tremella Nostoc seen.	30.056 — 29.904	64—52	S.W.	38	44	17	2 39	27	0 b. 9	167
16	W	Buckthorn leaves.	30.031 — 29.832	67—45	W.	—	44	17	3 5	28	0 22	168

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 73° and 49.6° respectively. The greatest heat, 90°, occurred on the 13th in 1842; and the lowest cold, 30° on the 15th in 1830. During the period 115 days were fine, and on 60 rain fell.

IN the infancy of any art or science, as certainly as in the infancy of the human mind, the results of imagination predominate far more than those of cool inductive reason. Thus in the early days of chemistry its adepts revelled in visions of creating gold; when medicine was similarly young she was equally wild in the pursuit of the elixir of life; and young mechanics roam after the perpetual motion. So when horticultural literature was young its chief authors were poets; and when more sober writers succeeded in our land, they either wrote in verse like Tusser, mingled the fabulous with facts like Hill, or translated from the ancients, mixed verse with their prose, and new truths with old fictions, like BARNABY GOOGE. This said Barnaby Googe was a literary character of the 16th century, whose poetry and translations are very superior specimens of our language, both in prose and verse, if they are compared with the similar productions of most of his contemporaries. It has been conjectured that he was born about the year 1538, but there is no room for conjecture, inasmuch as that he dates one of his prefaces, "In the year of Christ, 1560, and of my age, 20." In the same preface, that of the edition containing the first three books of *The Zodiack of Life*, he also styles himself "B. Goge of Alvingham" (*B. Goyæus Aluinghamus*), which determines the place of his birth; for it confirms this passage in old Anthony Wood—"If I mistake not, he was Barnaby Gooche of Albingham, or Alvingham, in Lincolnshire, grandfather to Barnaby Gooche, living there in 1634 and after." The difference in the spelling is not material, for in another sentence Wood speaks of him as "Barnaby Gouge, Goch, or Gooche."

He was educated at Christ's College, Cambridge, and removed thence to become a student-at-law in Staples Inn. It is certain that he is the Barnaby Googe who was a gentleman pensioner to Queen Elizabeth, and a relation and retainer of Sir William Cecil. It is probable, also, that he was the father of the Doctor of the same names, Master of Magdalen College, Cambridge, who was incorporated at Oxford when King James was there in the August of 1605. In 1563 he published a little volume of *Eclogues, Epitaphs*, and *Sonnets*, a work now so rare that only two copies are known, one of which is in the library of Trinity College, Cambridge. His principal translation was the wearisome satire of Palingenius Stellatus, entitled the *Zodiac of Life*. This appeared complete in 1565. In 1570 he translated from Naogeorgus a poem on *Antichrist;* in 1579, Lopez and Mendoza's *Spanish Proverbs*; and afterwards Aristotle's *Table of the Ten Categories*. The work entitling him to our notice first appeared in 1577, and an edition, "Enlarged by Barnaby Googe, Esquire," and dated 1614, is now before us. It is entitled, *The whole art and trade of Husbandry, contained in four books—viz.*, 1. *Of Earable Ground, Tillage, and Pasture;* 2. *Of Gardens, Orchards, and Woods;* 3. *Of Cattle;* 4. *Of Poultry, Fowl, Fish, and Bees*. The dedication is dated from Kingston. He says these four books were "collected and set forth by Master Conrad Heresbach, a great and learned counsellor of the Duke of Cleves," "altered and increased with mine own readings and observations." He includes the culture of *the Vine* because he believes it may be successfully cultivated here, and, as a proof, he states—"There is besides Notingham an ancient house called *Chilwell*, in which house remaineth yet, as an ancient monument, in a great window of glass, the whole order of planting, pruning, stamping, and pressing of vines. Besides, there is yet also growing an old vine that yields a grape sufficient to make a right good wine, as was lately by a gentlewoman in the said house." Can any of our readers inform us what has become of this old mansion, and whether there are any remains of its window or of its vine?

"In England," he says, "the best *cheese* is the Cheshire and the Shropshire; then the Banbury cheese; next the Suffolk and the Essex cheese; and the very worst the Kentish cheese. The places where the best cheese is made appeareth in this old English distychon, better sensed than footed:—

"Banbury, Langtony, Suffolk good cheese, Essex go thou by,
Shropshire cum Cheshire, Hertford may well with the best compare.

"Of the discommodity of the Essex cheese, our English Martial, John Haywood, thus merrily writeth:—

"I never saw Banbury cheese thick enough,
But I have seen Essex cheese quick enough."

In his observations upon poultry he says:—"Let your *hen* be of a good colour (dun, red, yellow, or black), having a large body and breast, a great head, with a straight, red, and double comb, white ears and great, and her talons even."

Book the second is a dialogue between Thrasybulus and Marius, of gardens, orchards, and woods, opening with a declaration of the antiquity of horticulture—proceeds with a very just description of the best situation of a garden, the necessity for a good supply of water, and the time for applying it; of enclosing a garden by walls, &c., but with especial directions how to form a quickset hedge. "The beds are to be made twelve feet long and six broad, that they may be easier weeded." Then follow directions about the most favourable age of the moon, during which to sow. The best as all suppose is "the moon being aloft and not set." Of asparagus he gives directions to cultivate, nearly as followed at present, with a notice of its cookery, "as my friend William Pratt, very skilful in these matters, telleth me." "If you breake to powder the horne of a ram, and sowe it watrying it well, it is thought it will come to be good sperage" (asparagus). Endive was bleached in various ways. That by "tieing the leaves together, and covering them with some little earthen vassel," seems to have anticipated our mode of blanching sea-kale, &c. Upon the whole, the work is certainly, as he makes one of the characters say in his dialogue, on a subject "not thoroughly entreated of by others," and therefore by implication more perfectly by himself. It is a book replete with just observations, and, though short and imperfect, still superior to any work that had preceded it, and in fact is superior in the details of cultivation to Parkinson's Paradisus, that appeared more than half-a-century subsequently. Too much, however, is taken from Greek and Latin authors, rather than from contemporary practitioners. Theophrastus, Cato, Columella, Pliny, &c., are continually quoted as authorities, and, in unison with them, absurd practices, and superstitions the most gross, are given with all the earnestness of truth.

He concludes with these *Old English Rules for purchasing land:*—

First, see that the land be clear
In title of the seller.
And that it stand in danger
Of no woman's dower.
See whether the tenure be bond or free,
And release of every feoffee.
See that the seller be of age,
And that it lie not in mortgage.
Whether a tail be thereof found,
And whether it stand in statute bound.

Consider what service longeth thereto,
And what quit rent thereout must go.
And, if it be come of a wedded woman,
Think thou then on covert baron;
And if thou may in any wise
Make thy charter with warrantise,
To thee, thine heirs, assigns also,
Thus should a wise purchaser do.

In 1579 he published *A New Year's Gift, dedicated to the Pope's Holiness, and all Catholics addicted to the see of Rome; preferred the first day of January, in the year of our Lord God, after the course and computation of the Romanists, one thousand, five hundredth, seventy and nine, by B. G., citizen of London: in recompense of divers singular and inestimable reliques of late sent by the said Pope's holiness into England, the true figures and representations whereof are hereafter in their places dilated.* This is about the most scarce of Barnaby Googe's works. It contains a letter written by Cuthbert Tunstall, Bishop of Durham, and John Stokesley, Bishop of London, to Cardinal Pole at Rome; the lives of Popes Alexander II. and Gregory VII.; a comparison between Christ and the pope; a description of the pope's merchandise, with an engraving of the rosaries, seals or bulls, and other articles for sale to those who would have faith in their efficacy; the poisoning of King John; the Maid of Kent's tragedy; an oration made by a Scotch bishop to the King of Scots, &c. He gives in verse, according to his custom, "the argument" of the work.

Th' aspiring mind caus'd Reynold Poole to swerve,
And to become a traitor to the king—
Truth tries it out, and law and justice bring
Unto his mates such death as they deserve:
He quakes for fear, and through the seas doth carve
To Rome, and there is by the holy Pope
Made Cardinal, and obtains a larger scope.
With might and main Poole then the Pope doth serve,
And saith the King may not be supreme head.
Two learned men, which do lament his fall,
Send him this book, that folly to forbid;
Yet he (God wot) regards it not at all,
But, like an ass, doth for a scarlet hat
Forsake his God, his king, and country flat.

It is not to be supposed that Googe, the poet and the courtier, could be without his "ladye love;" but, having one, we could not have anticipated that he would have set Prime Ministers and high ecclesiastics to work to wrest her from her parents—yet so it was. In the Lansdowne MSS. (6, No. 81) there is a letter from Dr. Matthew Parker, Archbishop of Canterbury, dated November 20th, 1563, advising Sir William Cecil that he had received his letters, "wherein you wrought for your cousin and servant Bernaby Goge to have his matter heard according to law and equity." He then states that he had had the young gentlewoman before him, and "she remaineth firm and staple to stand to that contract she hath made." He also had her father and mother before him, whom his grace adds, "I find the most ernest parents against the bargain as I ever saw." "In fine," says his grace, "I have sequestered her out of both their hands into the custody of one Mr. Tuston, a right honest gentleman." This was a tolerably strong proceeding, but the Archbishop resolved that a prime minister should not be thwarted; and, that there might be no mistake, he adds that he will keep her sequestered "until the pre-contract which is by her parents alleged for one Leonard's son, a pre-notary, be induced; but they may give occasion to bring it into the (Court of) Arches to spend money; howbeit, I mean to dull that expectation, and to go plain and summary to work, to spare expenses, which Leonard and his wife would fain enter to weary the young gentleman, peradventure not superfluously moneyed so to sail the seas with them." We now see more clearly the cause for such energy, for a rich wife was not to be allowed to escape easily from a young poet "not superfluously moneyed." The father fought hard to do what he liked with his own daughter; but a prime minister, and an archbishop, and, we are glad to add, the lady's own inclination, were odds not to be fought against successfully, and Mary Darell became the wife of Barnaby Googe. (*Gentleman's Magazine*, 1837.)

We have before us a list of the prizes to be offered at the fourth great annual *Birmingham and Midland Counties Exhibition of Poultry*, which is to be held in Bingley Hall, Broad-street, Birmingham, on the 14th, 15th, 16th, and 17th of next December. In 1853, the exhibition is to be at Nottingham.

The classification is excellent, bearing evidence of great care and judgment, and the prizes (1, 2, and 3,) are liberal, varying between two guineas and ten shillings. But why is the highest prize for Poland fowls limited to one guinea, whilst all the others, except Bantams, have a first prize of two guineas? We ask this question for information, because, though our own opinion is in favour of the Cochin-China, Dorking, and Spanish, just in the order we have named them, yet we know there are poultry-keepers who prefer some of the Polands to all others. There is a record of five hens of this breed (black with white crests) laying 503 eggs in eleven months, and only one of them wanted to sit during the time.

We have but one objection to the regulations of this, and of all other poultry exhibitions, and that objection is to the putting on what is termed a prohibitory price to any pen of fowls. Why not say, "Not to be sold?" Prohibitory prices lead to delusive conclusions and expectations, for we have heard more than one poultry-keeper observe, "Some of the Cochin-Chinas at Birmingham were *valued* at £60, and even £100 the pen." If all those willing to sell were requested to affix the selling price, there would be plenty of exhibitors who would do so, and this would secure all desired advantages, and prevent all delusion. Moreover, not only is it of no use for an unwilling seller to name a prohibitory price, but it is discouraging to a genuine seller to have his "twenty shillings" appear by the side of "twenty pounds." It looks like an acknowledgment of inferiority, and is so received by a majority of the spectators.

The following is the classification adopted at Birmingham, and we recommend it to the attention of all Poultry Societies:—

Spanish.
Dorking; single-combed.
Dorking; double or rose-combed.
Dorking; white.
Cochin-China; cinnamon and buff.
Cochin-China; brown, and partridge-feathered.
Cochin-China; white.
Malay.
Game; white and piles.
Game; black-breasted, and other reds.
Game; blacks, and brassy-winged, except greys.
Game; duck-wings, and other greys and blues.
Golden-pencilled Hamburgh.
Golden-spangled Hamburgh.
Silver-pencilled Hamburgh.
Silver-spangled Hamburgh.
Polands; black with white crests.
Polands; golden, with ruffs or beards.
Polands; golden, without ruffs or beards.
Polands; silver, with ruffs or beards.
Polands; silver, without ruffs or beards.
Any other distinct breed.
Bantams; gold-laced.
Bantams; silver-laced.
Bantams; white.
Bantams; black.
Bantams; any other variety.
Pigeons.
Geese.
Ducks.
Turkeys.
Guinea Fowl.

Poultry prizes are this year offered for a cock and three hens of any age, and for a cock and three pullets, chickens of 1852, in all the classes. In the classes for Spanish, Dorking, and Cochin, there are also, in addition, prizes for a cock and one pullet.

FORSYTH MSS.

Next among Mr. Forsyth's correspondents, whose letters deserve quoting, is Dr. Thomas Dancer, a physician long resident in Jamaica, and who obtained, in 1787, the curatorship of the Botanic Garden at Bath, in that Island. His predecessor was Dr. Clark, who does not seem to have taken much care of the Garden, for Dr. Dancer says, writing immediately after his own appointment, "I have a most herculean task to undertake, the Garden having been totally neglected for these two or three years." The letters from Dr. Dancer, though numerous, are of slight importance, and we know little more of his history than that an Essay by him, *On the Cinnamon Trees growing in Jamaica*, was published in the 8th volume of the Transactions of the Society of Arts, and that he died at Kingston, in that Island, on the 1st of August, 1811. He had ceased for some years to hold a botanical appointment.

The Jamaica Cinnamon Trees, he says, were raised from a few plants captured in a French ship, bound from the Isle of France to Hispaniola, and were presented to the Botanic Garden by Lord Rodney, when he touched at Jamaica, after his victory in 1782.

The following letter is printed more as a specimen of the writing of this botanist but little known, than on account of the importance of its contents; but we may point out the narrow and mistaken policy to which allusion is made, and may add, that in a subsequent letter, he informs Mr. Forsyth that Sir Joseph Banks told him that that narrow policy was carried out, and the duplicates were withheld from Mr. Forsyth.

The following letter is dated Jamaica, April 4th, 1793.

DR. DANCER TO MR. FORSYTH.

I have to acknowledge the receipt of your favour some time since, acquainting me of your having sent me a parcel of seeds, for which I am much obliged to you; though they are not yet come to hand, and may possibly in their passage suffer the same fate as my intended presents to you.

I should have felt a great pleasure in attending to your request respecting plants, but I have been employed for some time past, by the House of Assembly, with making a collection for your associate, Mr. Ayton, at Kew, to be ready for Captain Bligh, who has since arrived, and I understand has positive instructions to take no plants for any person besides. I have, however, taken care to put as many duplicates as possible, and in my letter to Sir Joseph Banks, have requested that you may be admitted a sharer. I shall send you a few seeds by the same or some other opportunity. I had got together the best collection that the time and circumstances allowed, and Captain Bligh was to have sailed the first of this month, but as he was about to take his departure, the news of war arrived, and it is impossible to say how long he may be detained.

GOSSIP.

We do not remember to have ever received reports so unanimous in describing the crops of all *hardy fruits* being abundant to excess. "The trees of apples, pears, cherries, gooseberries, and currants are literally covered with embryo fruit," is an extract almost verbatim alike from letters which we have received from Cornwall and Northumberland.

The Bury St. Edmund's Horticultural Society held its first meeting for the season in the Botanic Gardens, on Friday, the 21st instant.

"The proprietor of the gardens, N. S. H. Hodson, Esq., spared neither labour nor expense to render the interesting Abbey Grounds as attractive as possible. The Society provided a military band, from Ipswich, of the very first rank in the country, which gave the greatest satisfaction. But, unfortunately, the weather proved most unfavourable, as it rained nearly all the day; and the company consequently was much less than it would have been under more favourable circumstances. Of vegetables the supply was abundant, and the quality excellent, more particularly cucumbers, rhubarb, and asparagus. The strawberries in pots, exhibited by Mr. Petchey, gardener to W. Burrell, Esq., were well-grown *British Queens*. The geraniums were large and well-grown, but not sufficiently forward; but the fancy geraniums were more forward and better flowered. The prizes for roses in pots were awarded to Mr. Smy, for fine-flowered plants of *General Alland*, *Prudence*, *Rosa*, *Madame Laffay*, *Dr. Manx*, *Louis Bonaparte*, and *Jaques Laffitte*. The specimen heath, exhibited by Mr. Skinner, gardener to Sir G. Gage, Bart., was a beautifully-grown and well-flowered plant of *Erica propendens*. Beautiful blooms of pansies were shown by Mr. Barnes, of Stowmarket, and Mr. Chater, of Haverhill. In the latter collection was the *Beauty of Haverhill*, *Sparkle*, and *Picotee*, named from its resemblance to that favourite flower."

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Barton-upon-Humber. First show 14th July. (*Sec.* C. Ball.)
Botanic (Royal), June 30.
Bridgewater, June 23; Sept. 22. (*Secs.* Mr. J. Leaker, and Mr. J. Hayward.)
Brigg, July 7th, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
Bury St. Edmunds, June 25, at Sir H. Bunbury's; July 30 (Picotees); Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
Caledonian (Inverleith Row), Edinburgh, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, June 15, Aug. 26.
Clapham, July 8, Sept. 11.
Chiswick, June 12, July 10.
Colchester and East Essex, June 23, at Mr. J. Taylor's, West Lodge, Lexdon Road; Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Derby, Aug. 4.
Dinnington (Newcastle-upon-Tyne), July 14; Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)
Durham, June 16, Sept. 8.
Forfarshire (Eastern), July 21 (Brechin); Sept. 15 (Arbroath).
Guildford, June 16 (Millmead House).
Hampshire, July 1 (Winchester), Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hampton Wick, July 1. (*Sec.* Mr. B. Regester.)
Hexham, Sept. 15, 16.
Hull, June 24, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), June 24, Sept. 9.
Lewes Grand National, July 14 and 15.
Lincoln, July 27, Sept. 14.
Liverpool, June 24, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), June 8+, 22, July 13+, 27, Aug. 10+, 24, Sept. 14+, 28, Oct. 12+, Nov. 9+, 23, Dec. 14+.
Maidstone. Fete. June 24. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), July 9, Sept. 10.
Newbury, June 18, Sept. 3.
North London, Sept. 14; Nov. 23, Chrysanthemum.

Northampton, June 29, Rose and Pink; July 27, Carnation; Sept. 27, Dahlia.
Oxfordshire (Royal), June 23; July 29; Sept. 23. (*Secs.*, C. Tawney, and W. Undershell, Esqrs.)
Peebleshire, July 13th, Sept. 14th. (*Sec.*, J. Stirling.)
South Devon Botanical and Horticultural, July 13; Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), June 17†, 23, July 15†, 21, Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, June 11, Aug. 6, Sept. 17.
Whitehaven, July 9, Pinks; Sept. 17, Dahlias.

POULTRY SHOWS.

Agricultural Society (Royal), Lewes, July 12.
Bath and West of England (Taunton), June 9, 10, and 11.
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).

† For seedlings only.

ORCHARD HOUSES.

(*Continued from page* 82.)

Having promised to look a little farther over this subject in a practical way, we return to it, not so much in the hopes of throwing any particular light upon the subject, as of helping to attract attention to a most deserving improvement in fruit culture. That such houses will be well adapted for fruits without artificial heat there is no ground for disputing. But this admitted, the case can by no means rest here. So various are the horticultural wants or aims of the present day, and so varying the means and amount of enthusiasm of the different grades of society, that if any one point of high gardening be touched in a way to inspire confidence, hopes of an expansion of the idea seize the mind of thousands. Thus, indeed, it ought to be, and thence progression; a feature of marked prominence in the British Isles at the present day.

The form of roof was adverted to in our last paper; this is a first consideration. Mr. Rivers, the ingenious schemer of the orchard-house, has set forth the lean-to; whether this is the very best form or no, we are not perfectly assured. This time-honoured mode, we are afraid, has tended to cramp progress, and to forge manacles not easily broken. The present Sir Joseph Paxton was amongst the first to open this question wider, and in our day, men of the soundest practice, backed by no inconsiderable amount of appreciable science, have not been wanting in their attempts to escape from this horticultural vassalism. The form-of-roof question is therefore still an open one, and likely to remain so for awhile; nothing but a settlement of the comparative virtues of our different kinds of glass, with, in addition, well-defined objects, can settle these things on a satisfactory basis. So much for the present position of gardening affairs, as connected with the orchard-house, the glazed promenade, &c., forming as they do a sort of architectural hybrid, or a transition state, from the simple coping, through the conservative-wall, and up to the hothouse. Cheap glass, cheap bricks, and a tolerably high degree of national prosperity, has accomplished all this, and we see little to lament in the change; pointing as it does to the increased comfort of thousands, besides constituting an incentive to the employment of labour. But somebody may say, why all this prelude to a simple question? By your leave, good friend, not so very simple. It is, as it were, untrodden ground, and as by the proverb, "Fools rush in where angels fear to tread," so we are reminded that both modesty and circumspection are needed in such a case.

To make some progress, however, we will first observe, that it is extremely likely that a span-roof, running north and south, and of course presenting an east and a west, or morning and evening roof, will be found the best for those who seek simplicity in management. Such roofs are more easily ventilated, for we dare not divest the question of the necessity of ventilation, which, however, may be rendered so simple, that any domestic servant, giving two minutes trouble—morning and evening—may carry out every requisite in this respect. If, however, the house is required to be of a mixed character, a fruit and flower promenade, it may in many cases be required to subserve the general effect architecturally, and this may in some degree be permitted to dictate both form of roof, and the direction of the house. Whilst on this part of the subject, *glass walls* naturally come in view, and as in duty bound, we must beg to refer to them. With every respect for the inventors, there is some doubt whether these will accomplish what they are designed for, if not, they will be found somewhat expensive toys to play with. As for the suggestion, that "by widening they become elegant hothouses," it really sounds very like what is termed an Irishism. To advance to the climax, we suppose that by another extra stretch they would become Crystal Palaces. However, we much fear they will prove too expensive, and we really could have wished that, like Mr. Rivers's orchard-house, a successful case could have been pointed to by the ingenious inventor.

Since, then, a roomy house may be had for little more than a glazed promenade, or glass walls if you will; and since we do think that such will accomplish all that the walls can do, and something more, we feel bound to adhere to the idea of an orchard-house as a very necessary structure for the million, and as an appendage to extensive gardens by no means disreputable. We see no reason to depart from the title, which would be an act of gross injustice to Mr. Rivers; there has been quite enough of this "winning with another man's horse." If any one chooses to appropriate such a structure to plants alone, why it ceases to be an orchard-house of course, and is simply a plant-house. It is necessary, in discussing this matter, to keep up a kind of distinctiveness; to keep constantly in view the peculiar features of the plans of the inventor.

Repetition may be permitted here, and we may again observe, that in the building affair a more severe economy has been carried out than hitherto practised in hothouse building; and that this economy extends to the interior arrangements, the extreme simplicity of which involves so trifling an expense, as to be scarcely worthy of consideration. As for the beech-hedge back, it, of course, is part and parcel of the original plan; but this, we fear, will prove economy run mad; for ourselves, we cannot gravely entertain the idea. Fitting it may be for a nurseryman, but when gentlemen, not possessing extensive gardens and hothouses, indulge in the luxury of an orchard-house, we do hope they will have courtesy enough towards the female members of the family, to secure them an interesting house where, in the winter, they may receive a perfect immunity from the north wind, the biting frost, and the drifting snow.

We must go further, and endeavour to persuade our friends not to be alarmed at the introduction of a couple of hot water pipes, so placed as scarcely to be perceived in the structure, and certainly not permitted to interfere with the fittings-up of the interior. In securing the power of applying artificial heat, however, under adverse circumstances, we would confine ourselves to simply keeping out frost, or, at most, encouraging a temperature of 50° maximum; whatever would not submit to this ordeal, we would exclude from our collection. It will here be perceived, that we would fain make it a decorative affair, combining the useful and ornamental;

and, indeed, this is what we do hope to encourage, for it does really seem a pity to build a *mere orchard-house;* not one lady in a score would care about entering it, and it would be next to a monopoly on the part of the "lords of the creation."

A true orchard-house in a gentleman's kitchen-garden who possesses plant houses, is another affair; here we say, the less mixture the better. We shall now feel bound to go on with the subject, and shall show forth a classification of objects adapted to a house of the kind, and to the wants of those likely to adopt them.

R. Errington.

HORTICULTURAL EXHIBITION, REGENT'S PARK.—MAY 19th.

(*Continued from page* 148.)

Stove Plants.—The *Hexacentris* and the *Medinilla*, which were the lions at the Chiswick Show, were past their prime here, and the willow-leaved *Ixora*, the Imperial *Hoya*, and the *Dipladenia splendens* took their places as the best and newest stove plants. There were two small plants of *Hoya Paxtonii*, which were newer to me, because I never saw the plant before, and I would not fret much if I should never see it again; but the *Hoya imperialis* is certainly a grand plant, and very probably will flower more freely as it gets older. It was here represented in capital training, just in the way so many gardeners train the Alamandas and Stephanotis, and there were a good many bunches of flowers on it, but unless you were aware of it, you would never take it to be a Hoya from your knowledge of the old sort, which drops the honey from the flowers. Mr. Cole, gardener to H. Colyer, Esq., had this *Hoya*, *Ixora*, and the *Dipladenia* in his collection, which won the second best prize; Mrs. Lawrence, as usual, coming in for the first, but I never saw a closer competition before, it was neck or nothing. Some years ago we could not come to a decision at Chiswick on two collections coming so close together, and to get out of the difficulty we would as a last resource give two first prizes, but that was put a stop to, and the present generation of judges are obliged from necessity to learn judgment, as carefully as the exhibitors grow and train their plants. The *Ixora salicifolia* is a splendid plant, fully as desirable as the old *coccinea*, and as easy to grow and flower, but the flowers are not quite so rich, and the individual flowers are more starry. The colour is of two shades of yellow—orange, and yolk of egg. *Ixora Javanica* is another very fine species, but it was not at either of the first shows. The *Dipladenia splendens* I never saw finer, nor nearly so large, nor with so many flowers open at one time. There were a score of them, or nearly so, on this fine specimen. What interest is always created by a fine specimen of the Madagascar periwinkle (*Vinca rosea*), a plant as old as the hills, and as common as daisies, and known almost to everybody, yet no one is tired of it. You see it exhibited at all the shows, in the best drawing-rooms and conservatories, and indeed wherever plants are put up for creating a scene, or adding to existing beauties. The *Stephanotis floribunda*, and the *Alamanda cathartica* and *A. Schottii* are now getting quite as common as this Vinca, and deservedly so, but for the life of me I cannot see where the difference between these two Alamandas is to be found. The only difference in my opinion is that they are both alike, but you can have the flowers of two or three different sizes according to the style of cultivation. What a pity that Mr. Lobb missed the really distinct Alamandas of which the late Mr. Gardener brought home dried specimens, and which he so graphically describes in his travels in Brazil; and how is it that no one speculates on sending out a collector for these, and the gorgeous *Bignonias*, which have never been seen out of the Brazils, except in a dried state? I know very well that no one can manage to get good seeds of them over, but then stout pieces of their roots will travel anywhere if well packed, and they would push, grow, and flower with us by our improved means, almost the first year.

Orchids.—I never recollect so few of them shown in May. *Clerodendron Kæmpferii* at Chiswick, and *Clerodendron fallax* at the Park, were all that I saw of that section, but the woody climber, *Clerodendron splendens*, was never better done on this occasion, and I mention it the rather to notice the great difference in the colour of the flowers from the same seed packet. Three different kinds of colour appeared in the flowers of the seedlings, and before any of them flowered they got so mixed and spread about, that scores have given up the plant altogether, because they only had the inferior sorts, one of which had the flowers brick-red, one like something you could buy at the butcher's, and the third a fair average scarlet, and this is the only one worth putting into a pot. I once had a seedling *Clerodendron* in the way of *fallax*, which produced twenty spikes of bloom at the same time, in the conservatory of the Dowager Lady Middleton, but this variety was lost the following winter, and none so good has yet appeared; but were it not that they take up so much stove room, people would cross them till they got up like geraniums, roses, and other fine things improved by diligent cultivation. There is one thing with most stove plants, which the judges remarked ten years ago, and it is, that when they pass a certain age and size, all the gardening in the world will not be able to get them into exhibition trim; but it is not so with orchids, and greenhouse plants, hence the great increase, both in the size of these plants and the numbers of them brought up for exhibition every year.

Cinerarias.—My strictures on the cinerarias shown at Chiswick referred to the sorts, *not to their growth;* and now having seen them at "the Park," I have come to the conclusion that, to have any chance of a prize at all, you must grow bad sorts, and grow them most capitally too. In a few more years cinerarias must disappear from our exhibitions, just as the calceolarias have done, or at any rate are doing; for nobody will look at them. When I came to reside near London, fourteen years ago, Mr. Appleby's employers used to have most splendid cinerarias, and the ladies from the "west end" used to be out there admiring them in crowds every afternoon, so that the Edgeware-road was blocked up with their carriages. But now if you stand all day long opposite the cinerarias at our London exhibitions, you will not see one lady out of fifty even stop to look at them. "How is it, Mr. Beaton, that the cinerarias are so weedy to-day? We used to see good cinerarias here, but now we have much better in the country!" and sure enough they have, and as gay as ribbons, but gaiety, if I must tell the truth, ladies, is not the thing to be first prized in these flowers. You see they are in the form of a coach-wheel, and the great thing is to have them round, all the colour and gaiety in the world will not make a carriage go easy if the wheels are not perfectly round. Now it happened very unfortunately that the only wild cineraria which had a natural tendency to form a perfect circle, was of a bad colour—between white and sky-blue. All the scarlets, the purples, and the deep blues, on the contrary, are from other species, which tend more to the starry, and as colours are only secondary considerations with the florists, the fine colours are fast disappearing from this field, and milk-and-water, and "blue ruin" will soon be the ground of all the colours in the really good cinerarias; that is the prevailing colour now, and the only seedling that took a prize at this exhibition was of the same sickly hue. It is a most excellent seedling no doubt, and worth seven-and-sixpence a plant to a florist, but it would be dear at

ninepence to anybody else, unless it were in a large pot, which would pay part of the expense when the plant was thrown away. *Prince Arthur* was by far the best un-florist cineraria there; as at Chiswick, then *Carminette*, after that *Angelique* and *Amy Robsart*. These were the only crimson shades. For dark purple we had three—good, better, and best—or *Wellington*, *Bessy*, and *Mrs. Sidney Herbert*. There were six kinds of those pretty white-eyed, daisy-looking kinds, with bright red edges, or tips, which are the greatest favourites with most ladies. Their merit is as they stand here:—1, *Wedding ring*; 2, *Climax*; 3, *Rosy morn*; 4, *Charles Kean*; 5, *Mrs. Sidney Herbert*; and 6, *Picturata*, a seedling which had no prize of course, because it was pretty. I said the great bulk were white and blue-edged, or with a faintish purple edge. Out of scores of this stamp, *Lady Hume Campbell* and *Effie Deans* were the only two that I would grow; and were it not for one of the names (I do not mean Effie), I am not sure that I would grow any of the lot. But I owe more than respect to Lady Hume Campbell, for I owe her ladyship the first good white scarlet geranium that I can raise, in exchange for the first white variety of the scarlet breed I ever saw—the *Zona-le-alba*, of Sweet. *Annie* is rather pretty, white centre, purple tips, and a reddish shade between. *White Perfection* is white all over, centre and all, and *Queen of Beauties*, the same, except the centre or eye, like those of Black-eyed Susan; these two would make white beds in a shaded situation, or where the sun did not reach them in the height of the day. *Cerito* was much cried up these three or four years past, but I do not like it at all; looks pale and sickly, like Charley after having a drop too much. But talk of pale faces after artificial stimulants, there were two large pots here, in the rose tent, filled with one of the richest flowers we have at this season, *Cheiranthus Marshallianus*. I said, the other day, how well it would do for a bed at the end of the spring, and here was a proof; two whole beds could be made out of these two beautiful specimens; but, alas! they were not better than *Cerito*, they had too much heat, and were spoiled in the cooking. But still our point is gained, just as well as if these had a gold medal; beds this plant will assuredly make, and fine specimens too for the conservatory in May, when yellow flowers are scarce, only let them be in their flowering-pots by the end of September for the first crop; the second, shift finally about the middle of February; and if there be a third succession, pot a month later, and keep the plants quite out-of-doors, and none of them will force except at the expense of colour.

Messrs. Standish and Noble, of Bagshot, had their beautiful new *Azalea amœna* here, and in better condition than I have yet seen it. A student of the great Linnæus would drive it far away from all the heathworts after counting the stamens, which number but five in this beauty, so that we have now five, eight, and ten stamens in wild species of this one genus alone; but then, the position of the stamens, on which so much stress is laid in "natural arrangements," is just as fickle in some orders and genera as their number is in this.

In the florists' *Pelargoniums*, the best new one by far at this exhibition was a seedling by Mr. Hoyle, called *Basilisk*. This is the very first seedling that has been got in my time. *Incomparable* and *Magnet*, it will be recollected, were my favourites of all those at the first Chiswick Show; *Basilisk* is now before them in my estimation; but as all fancies in flowers depend on rules without laws, or, rather, on rules founded on arbitrary laws, I must qualify my assertions so far as to say, that I have really no dependance on my own judgment in these things, therefore my opinions, whether right or wrong, are borrowed from others, principally from ladies, for the last twenty years; and I had so much practice, that I could tell to a shade the first plant that nine ladies out of ten would mark out of a thousand. If a large tent was filled with geraniums of all the sorts, I am quite sure Basilisk would attract more attention than any one else; then, up to this time, the high-coloured geraniums stand thus—*Incomparable*, good, *Magnet*, better, and *Basilisk*, best; but there is some hitch in the *rotundity* of Basilisk, or in the *profundity* of the florist, and they give it no shelter nor prize; still they are quite right, if they have laws, let them be ever so bad, they would be worse if they did not live up to them; and all that we insist on is, the colour, or combinations of colour, take the first prize; substance the second prize; and the power to withstand the sun the third and last prize. Who would award a first prize to a round, or, if they will, a perfectly circular flower-garden, if it was planted all over with mignonette, or heliotrope, or even with variegated geraniums? *Basilisk* is a clear light scarlet, with less black in the upper petals than any of them. The new dark blotch, once so much admired, is washed out, and the old streakiness, so prevalent between 1820 and 1830, reappears, but not in the old starry fashion, the streaks are collected together, and occupy the bottom of the place where the blotch stood; get rid of these veins altogether, and out comes *ne plus ultra* at last. These large geraniums were remarkably well staged at this exhibition; the plants were not so outrageously large as you sometimes see them, and all the better, I think; they were never seen in better health or bloom, and there were an endless number and variety of them.

Fancy Geraniums.—We ought to have a change in the way of showing this new class; of that I am more convinced every show I attend. The fancies will not submit to the rules of the professed florist, and if they did, they would lose much of their interest in the eyes of the public, especially the ladies; then, as matters now stand, public taste and the taste of the florist are pitted against each other in the geranium tent, that is, the strong against the weaker party, to the latter's prejudice. Now, although it is fair and lawful game to endeavour to laugh out of countenance the odd fancies of a brother, it is a very different thing to take advantage of his odd ways to his prejudice; therefore, the fancy geraniums ought to be placed in a tent by themselves, as far away from the large ones as can be done; so that by passing through intervening tents, the impression left by one class of geraniums might be blunted, as it were, before you enter the second geranium tent. The fancies were much finer and more numerous at this show than at Chiswick; the best sketch I could make of them was this:—Lightest sorts—1, *Queen Superb*; 2, *Empress*; 3, *Queen Victoria*. Those like *Ibrahim Pacha*—1, *Duchess d'Aumale*; 2, *Orestes*; 3, *Minerva*; but too near No. 1 to be kept in a select collection. The higher-coloured ones with light fronts, as *Reine de France*, stood thus—1, *Alboni*; 2, *Fairy Queen*; 3, *Odorata magniflora*; 4, *Reine de France*; 5, *Modesta*; and 6, *Erubescens*; all these were exceedingly gay and beautiful. Were it not that they would pull my ears for occupying too much space, I would run out this "running commentary," as they call it, to a much greater length, but my notes will come in for future pegs to hang my "pot hooks" on. D. Beaton.

ECONOMICAL HOUSES.

"What's in a name?" asked a great man. Almost everything in a commercial and novelty point of view with us ticklish folk, whether Saxon or Celt. I would not disparage in the least the beautiful geraniums sent, and sending out by the Messrs. Lee—*The Flower of the Day*, and *The Mountain of Light*—though some will say the first is flabby, and that the second is too shy for a

bedder; but could the wisest in the nursery trade have hit upon *names* more attractive to the ear, and the "telling" of which would have made the purchaser pay his money more readily. Aye, there *is* much in a name. If we keep in our present mood, the dealers in novelties will have as much need to employ a captivating name-finder, as Moses and Son have occasion for a rhyming poet. Again, time out of mind, gardeners, out of necessity, have resorted to all sorts of structures for their plants, vegetables, and fruits; some of them rustic, plain and unadorned, as any of the cracked-up cheap conveniences of present times. First, there was the protecting medium of talc, cloth, oiled-paper, thin glasses, made into pieces or sashes, and these again transferred to walls, fences, frames, and pits, such as we alluded to the other week. Ere long the inconveniences of these, as preventing the proprietor from examining the contents, unless in the finest weather, led to the deepening of the pit, so that he could get along it, or the deepening of a place behind it, sheltered from the weather, where he could walk and perform the necessary operations; the origin of our houses with a hipped roof; and then, when glass became more common, and the importance of light was felt, a span-roof was formed by placing two sashes together at any desirable angle; and many a temporary structure was thus often hastily formed, and as quickly removed when the necessity for it was withdrawn. But did any recommending of such places, by gardeners, ever give such an impetus to their erection and use by the middle classes as the propounding of the benefits of such places by Mr. Rivers, under the new title of *Orchard Houses*. The *new* name was the charm. Novelty in the application there might be, though I failed to discover it, in the hedge used instead of a wall, and thus acting as a sifting air medium, and yet a protecting agent—in the cut out path, to enable walking room, or even in the growing in pots, as that had long been done with all except our hardiest fruit-trees. There was, indeed, novelty, in the *simplicity*, cheapness, and effectiveness for a given purpose, with which they were erected; but there was no new principle ushered in, and scarcely any new development of an old one; and yet Mr. Rivers, by these houses of his, and the captivating name he gave them, has been happily greatly instrumental in diffusing a desire for the possesion of such houses, and better finished structures, by masses of readers, who otherwise might have continued to look at them as hopelessly beyond their reach. Whether he can claim novelty of invention or not, ought the beneficial result to weaken our gratitude to the successful instrument? Long before orchard houses were heard of, their principle had been acted and improved upon. A hipped roof was an improvement on the lean-to—a span-roof an improvement on the hipped. A wall of brick, of earth, of wood, or even reeds, or straw, or fern, with means for giving air at pleasure, was superior to any hedge of living material. Such span-roofed houses, standing with their ends nearly north and south, we have had to manage many years ago. I witnessed a very spacious one near London lately, where it has been long devoted to fruit and vegetable culture; and at Stowe, there is not one only, but a regular series of little villages of such houses, in which peaches, cherries, plums, &c., are grown on trellises near the glass, all as thickly studded with fruit as possible. It would have been impossible to say whether the trees on the east or the west side were likely to do the best, as all stood greatly in need of thinning, the fruit was so thick. Here there was no occasion for sinking a path, as the houses intended for early forcing being put up at an acute angle, the junction of the sashes at the apex left plenty of walking room, though the lower end of the glass sashes rested on a wall near the ground. This season the trees had received no forcing, but, as I understood, it had been found requisite to light a fire on several frosty nights. I mention this, because, in constructing a fac-simile of these orchard houses, whether for fruit trees or flowering plants, without any heating medium, much disappointment, we fear, will be the result, if the retarding process, or a protecting medium for the glass, or both, are not resorted to. As these structures will be found as applicable to flowering plants as to fruit trees, planted out or grown in pots, these hints will not be found out of place by those who wish for structures either cheap or elegant. To meet their case still further I will glance at the following questions.

1st. "I want economically to apply my six lights of pit and frame, so that I can examine what is in them at all seasons. Brick and stone are expensive; wood, especially larch poles, and turf, cheap. How am I to act?" A glass hipped roof, over a pathway, is for you the thing. Your lights are seven feet in length. Well, suppose you sink a pit from two-and-half feet to three feet beneath the surface, and from nine-and-half feet to ten feet in width; the front wall above the surface-line may be one foot in height, and the back wall from three feet to three-and-half feet; from the wall-plate, at back, have a short rafter about three feet in length, raised to an angle at the apex, to meet the rafter that is to sustain your sashes; the apex will thus be somewhere about eight feet from the base line of your pit, thus furnishing the tallest of men room for themselves, and a chimney-pot hat into the bargain. We have seen such pits constructed of turf, of clay and straw wattled together, and plastered when dry, upright wood-work being introduced every two or three feet to keep the building secure; of straw packed close between a double row of upright posts, and the inner and outside sides with reeds, or drawn straw placed upright to throw off wet. We have even seen furze and fern used for such a purpose, and the opaque part of the roof boarded slate-fashion, or thatched with straw, broom, or heath. As far as warmth was concerned, these make-shifts were superior to brick or stone walls; but the chief drawback about them, is the opportunity afforded by them for lodgings to destructive vermin. A very substantial and lasting pit may be formed by double boarding, and filling the place between with saw-dust, or by a double row of larch poles, their ends burned, and driven into the soil, kept secure in their place by a stout rail binding them in the middle, and a stout wall-plate connecting altogether firmly at the top. The space between might be from six inches to nine inches, and filled with saw-dust, dry moss, or even dry earth. In all this, however made, whatever materials used, the expense and trouble will only be a little more than for an ordinary pit, but the comfort and advantages are greatly superior. We suppose that you have a door made in one end so as to get in under your hipped roof. Allowing from two feet to three feet in width for a pathway, you might form a back to your pit, so that you could use fermenting material when desirable; or you could have merely stout posts and rail to support a platform of slabs two-and-half feet to three feet from the ground; or piers, or arches to carry an elegant platform of latticed work of wood, or slabs of stone or slate; or, if you wished to preserve large specimens, you need neither platform nor pit. When a platform was used for small growing plants, you could keep a great many things in a dormant state beneath it by merely keeping them *dry*. By using glass instead of asphalt, felt, or any opaque substance, for a back hipped roof, the back wall could also be covered, or furnished with shelves from top to bottom. The beauty of it is, that you can examine your plants in all weather, and by using coverings fixed to frames for protection, they will always be easily taken off and on when necessary. By tacking a lath along the sides of your sash, this sliding of the covers will neither scratch your sashes, nor injure the paint. When the bright days of summer come,

the laths may be removed along with the covers, the sashes washed, and this will render the winter and its litter forgotten. Such pits, or rather houses, will be very useful in small places, and may often be fixed economically where two walls meet, as then, with the exception of the glass, the chief expense would be the low wall in front, and the glass or opaque material for the end.

2nd. "At what angle should I place my glass roof?" This, as I previously endeavoured to show in detail, must depend on what you want, and the time you want it; 45° combines more useful properties than, perhaps, any other, as it will do for early, medium, and late work. For very early things, the glass should approach more nearly to the perpendicular—say from 25° to 35°. For gaining the most power in summer, the angle should be larger—say from 50° to 65°. In other words, suppose the same house was used, the front wall would require to be raised, so that the glass would be flatter. With rafters put in, so as to be moveable, it would be an easy matter to alter the angle of a house according to what was expected from it. We have yet much to learn on this subject. We build upright brick walls for tender trees; nay, we are to have upright glass walls for the same purpose. The fault in both is the same. The sun strikes most powerfully on them in early spring; vegetation is prematurely encouraged, only to be afterwards dangerously arrested. What if, before long, we should witness one of two things! either our early best walls protected by glass, *not upright*, nor at an *acute*, but at a somewhat *obtuse* angle, that little heat may reach the wall in spring, but a great deal find its way to the space before it in summer; or these walls devoted to late-blooming plants, or used chiefly as boundaries; while the best fruits will be trained against obtuse, sloping banks, rendered hard and waterproofed, or nearly so, on the surface, so that they may bloom late in spring, and then receive a more powerful heat in summer than ever they could receive against an upright wall.

3rd. "But you mentioned how these six feet lights, instead of covering several short pits, might be more economically employed in covering a span-roofed house." Nothing more easy. According as you sink, or do not sink your pit, have two side walls, each from a foot to three feet above the surface. Place two rods, six feet in length, against each other, triangle shape, and according to the steepness and flatness of your intended roof, will be the width of the base line; if too flat, there will be drip in winter. The rafters must join each other at the apex. The pathway will be in the middle, with a bed or platform on each side. Unless you have a broad shelf above your head, you will lose part of the light from the glass in the apex. But the house might be a little wider, and then you might have eighteen inches of opaque work on each side of the apex, against which the sashes would abut. This would render the house quite as pleasant for walking in, and the uses for plant-growing would be greater, while the expense would be less than for pits.

4th. "But, now, what is the best form of house you would recommend for keeping and growing plants?" I shall tell you what I should like to do, had I the chance to-morrow. The length I should say nothing about, as I would be greedy enough to take every inch I could get. I would have it to stand nearly north and south, and from fifteen to sixteen feet wide inside measure. The walls I should have three feet above the surface, with wooden ventilators in them; upright sashes, three feet in height; apex of the span roof, ten feet from the floor; front shelf all round, two feet wide; pathway, three feet all round, and a platform in the centre a few inches higher than the front shelves.

R. Fish.

CONIFERÆ.

(*Continued from page* 129.)

By our last paper on these fine trees we hope to have raised a desire amongst our readers to have some more information on such an interesting and important subject. As there is nothing like a method and arrangement in such matters to make them intelligible and useful, we shall treat the subject under the following sections:—1. Planting, including soil and arrangement. 2. An alphabetical catalogue, including height, habit, uses; as timber, as resin-producing trees, as food, as fuel, and as objects of ornament to the lawn or park. 3. Propagation by seed, by grafting, and by cuttings.

Planting.—Previously to planting, due consideration ought to be given for what object planting is undertaken. It has been a practice for several years, by many wealthy lovers of plants, to set out a plot of ground to cultivate one or more of all the trees hardy enough to bear the open air as specimens, and by such a collection to be able to judge of their respective merits as objects of ornament or use. This is a very useful and interesting study; but as from their great numbers this requires a large extent of land, and a commensurate expense, there are but few proprietors of estates that either have means or opportunity to carry it out to the fullest extent; but when it is done, the very appropriate name of Arboretum is given to such a collection. Mr. Loudon strongly recommended such collections being formed, and his great work the *Arboretum Britannicum* was a text to go by in forming them. Such gentleman as the Duke of Devonshire, and a few others, had the public spirit to carry out his views, but others contented themselves with forming smaller collections. The Duke of Bedford paid great attention to the *Salix* family, and the Earl of Harrington and several others to the *Pine* tribe, that which forms our present subject. This branch of an arboretum is happily enough named a Pinetum, or a collection of cone-bearing trees, of which the pines form so large a portion as to give it a name; the cones being commonly called pine or fir apples.

A pinetum, then, we will suppose to be determined upon. Of course it may either be large enough to contain several of each species, or only to contain one or two, or even only to afford space for the most beautiful kinds. Whatever extent is determined upon, due regard should be given to the situation. By far the greater number of the tribe are found at a considerable elevation above the level of the sea. Some grow on the steep, rocky sides of mountainous regions; others grow on dry, level plains, whilst a few species are found to inhabit low, swampy grounds, not positively wet, nor even flooded with water. Taking all these into consideration, the best situation for a pinetum will be a rather elevated position. Rich deep soil is not necessary, for the roots of the greater part of the tribe do not descend deep into the soil, but spread out on the surface. This may be seen whenever one is felled by a storm. The roots will then be observed to have spread far and wide; hence it will be seen at once that ground valuable for the growing of corn or farm vegetables, need not be encroached upon, but some place fixed upon where little else with profit can be cultivated. Then, as to the space required; this depends entirely upon the extent the proprietor may please to devote to the purpose. If mere ornament is all that is required, a space of from three to twelve acres will contain a very nice collection of the finest species, but if cultivated for profit, of course there is no limit to the space that might be occupied with them. Many proprietors of moor land have planted thousands of acres with the fir, the spruce, and the larch, and thus rendered their barren land productive and profitable. With such large operations we do not profess in these papers to have anything to do with. All that we wish is to increase

the number of collections of the more rare kinds throughout the length and breadth of the land, being sensible that they will lead to a more extensive planting of them when their beauty and usefulness is better known.

To return, then, to our pinetum. The situation and extent being fixed and determined, the ground, if wet, should be thoroughly drained, according to the best practice or mode of the present day. After that is done, the ground should be well trenched, and all briers or other weedy shrubs extirpated. The spring and summer is the best season for this work, because the days are long, and the ground will be in fine order for planting early the spring following. We prefer spring to autumn-planting for this tribe, because the roots will then be beginning to be in active operation, and will, with due care, suffer the least interruption of growing on during the moist and heat-increasing days of February and March; whereas, if the planting is done in the winter season, however mild it may be, the roots will be in a state of inaction, and will certainly perish (at least the more tender fibres) during that wet, cold season. This practice of spring-planting is suitable for evergreens, of which the tribe chiefly consists; whilst for deciduous or leaf-shedding trees, autumn-planting is decidedly the best season. At the proper season, then, have all the plants ready intended to be planted, and in our next we will describe the method of doing it. T. Appleby.

CULTURE OF ROSES IN POTS FOR EXHIBITION.

(*Continued from page* 152.)

Insects and Diseases.—To keep roses in health and free from the attacks of insects is a most important point of culture. Every other point of good culture, though put into practice at a considerable outlay of cash and labour, will be rendered useless if due attention is not almost daily bestowed upon the prevention of disease and the destruction of the various insects that prey upon this queen of flowers.

The insects that infect the rose are, the green fly, the caterpillar, the grub, and the red spider, and sometimes, though rarely, the thrip; also worms often find their way into the soil in the pots.

The Green Fly.—This pest is very troublesome, appearing frequently during the whole season. Happily it is easily destroyed by the smoke of tobacco, which, if carefully administered, is not injurious to the plants. The most common method is to place a vessel either of iron, which is the best, or of earthenware; a garden-pot with holes at the sides, and a piece of wire fastened to each side to form a handle, is a very good instrument as long as it lasts. If the house or pit is large, two or three of these vessels may be used with advantage, because then the house or pit is the more quickly filled with smoke. Place some red-hot cinders at the bottom, and place a covering of either tobacco or tobacco-paper upon them, in a rather moist state; this will prevent it from breaking out into a flame. If, when it becomes rather dry at the edges, and there is any danger of a blaze, have a fine-rosed small watering pot ready, with water in it, and sprinkle a little over the tobacco to prevent it flaming. This must be particularly attended to, for it is the flame that scorches the edges of the leaves, and not the smoke. As soon as the house or pit is so full of smoke that you cannot see the plants, remove the vessels containing the fire out as quickly as possible, and shut the house up close. The best time to smoke the house is in the evening, and the plants should be quite dry at the time.

There are other methods of filling the houses with tobacco smoke. One was described at page 122 of this volume by "Upwards and Onwards," which, though described in connection with a kind of small tent to be used for roses in the open ground, yet the method of preparing the tobacco is ingenious, and we have no doubt for a small house or pit would answer admirably. Messrs. Frazer and Son, nurserymen, of the Lea Road, have adopted a similar mode of preparing the tobacco, with the improvement of hanging up the bundles to the roof over the walk with pieces of wire. The rolls are lighted at the bottom, and gradually fill the house with smoke, the ashes dropping to the ground. Then, again, Mr. Ayres, of Blackheath, has mixed tobacco with capsicum or cayenne pods, with good success. Whichever of these methods are practised, they must be used as soon as the insects appear, and repeated whenever they reappear. Observe in the morning whether they are killed, and syringe the plants freely to wash off the dead insects; should any be found alive repeat the smoking the night following.

The Caterpillar and Rose Grub.—These, when young, can scarcely be seen, being little larger than small pieces of thread. They are not killed with the strongest tobacco smoke, though that will destroy their parents when in the fly state. The plants must be daily examined, and whenever any leaves or rose-buds are observed to be eaten or pierced with small holes, it may be taken for granted they are present. Sometimes the leaves will be curled up, drawn together at the edges by the tiny enemy; these should be squeezed together with the fingers and the grubs crushed. Caterpillars should be picked off as soon as seen, and destroyed. There must be no lack of diligence in hunting for and extirpating these pests, or the finest flowers will be disfigured and rendered unfit for exhibition.

The Red Spider.—Though this red-coated gentleman is not generally found on rose-trees excepting in very dry seasons, yet whenever it does appear means must be resorted to, to arrest its progress and increase. We have seen the buds of rose-trees, just after the winter is past, covered with them, and coming into active life just at the time when food for them comes into life also. When the plants have been in the house for a week or ten days, examine the buds with a magnifying glass, and if any are alive they will be observed in motion. Then is the time to apply means of destruction. Mix some sulphur and water together, and with a fine soft brush lay the mixture on every part of the tree. Though this will not kill them immediately, it will cause their food to be unfit for them, and they will starve to death. Should any survive, they may be prevented from increasing by the use of the syringe and keeping up a moist atmosphere in the house or pit. It is a fact well established, that a dry heat is favourable to the increase of the red spider, whilst the reverse, a warm moist atmosphere, is almost certain destruction. Should they in spite of all these remedies still increase (and spotted leaves will soon show that), the sponge will be found a capital resource, as also the fumes of ammonia. In desperate cases only must this dangerous gas be used. A few barrowsful of stable-dung, in a state of fermentation, is the most safe way of administering it. It might be placed under the stage in the house, and removed as soon as the insects are destroyed.

The White and *Black Thrip*, in some dry seasons, will attack the rose-trees, and very destructive they are. We have always found tobacco-smoke, frequently applied, both a preventive and a destructive remedy, not only in roses, but on stove plants, and even orchids. The space allotted to us is full this week, therefore we must postpone our observations on mildew, the disease that attacks roses in pots, till next week.

T. Appleby.

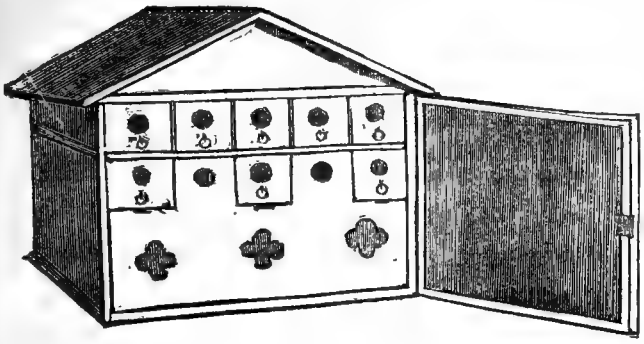
RED SPIDER ON MELONS.

A correspondent, whose case resembles many others, has asked our opinion regarding the use of sulphur as a preventive to the red spider on melons, complaining, at the same time, that the leaves over which he dusted some became brown, blotched, and ultimately died. Now, though we much fear before these pages meet his eye his melon plants must be either past a cure, or be so far advanced as to make disease of less moment, yet there are many who, no doubt, would be glad to hear a little on this subject; we, therefore, devote our weekly contribution to meet their case.

We have always been of opinion that, next to the destruction of the mealy bug on stove plants, that of the red spider on melons is a subject of great difficulty. The golden rule is, in both cases,—Try to keep the vermin away; as though certain extreme measures will annihilate both these pests, yet their destruction is rarely accomplished without that amount of injury to the plant which makes the cure worse than the disease. Nevertheless, as something must be done to save a crop of melons, which the amateur prided himself upon as likely to produce something valuable, and which, hitherto, looked every way promising, when lo! he is astonished or alarmed at seeing a few of the large leaves in the centre of the plant look rather brown or yellow; and, on turning them up, he sees a thin film of spider-work stretching between the ribs and other portions of the leaf, and, to the naked eye, minute insects of a brownish red colour may be seen nestled here and there amongst the network, which they have drawn over their workings. This latter pest, whose powers of production would seem to set all calculation at defiance, exists in such a multitude of plants of various habits, that it may almost be called universal. A gentlemen told me that he has discovered it on the leafless succulent plants of the cactus tribe; and we all know how much field turnips are affected with it in hot seasons; and trees innumerable, down to the very box-edging which margins our walks, being, in certain seasons, a martyr to it. Now, when we see it living and thriving on the hard leaf of box, how much more likely is it to take up its abode and multiply on the more delicate foliage of an annual plant so tender as the melon; so that we may fairly inquire, if a perfect remedy be not an unsolved problem? Nevertheless, we are far from giving it up, and as we have had much experience in the matter, we will give the result, with now and then a suggestion to meet individual cases, beginning first with what we suppose to be the causes which favour its first attack.

We are led to believe that the larvæ of this insect either lurk in the frame, or are carried thither by the winds, or some other of those agents which tend to multiply the species of the lower orders of vegetation, as well as of animals; our first duty is, therefore, to check that if we can, on the good old golden precept that "prevention is better than cure." Washing well the lights and rafters is attended with benefit, and the same to the interior of the box or pit, with all its fittings; after which, the latter ought to be white-washed with a compound in which lime and sulphur were mixed, with, perhaps, a little cow-dung to make it adhesive. Bright, sunny weather following after the plants have grown so as almost to occupy the whole of the frame, daily watering about four o'clock in the afternoon, and shutting-up for the evening, will be of great service in preventing this pest, much more so than our correspondent's plan of dusting with sulphur; this, however, cannot well be adopted in all cases with those kinds called "difficult setters," consequently, while that process is in operation, the frame must be kept more dry. If red spider attacks the plants at this early stage, we fear all the assistance in the universe will hardly ensure a good crop; but we will suppose them to have prospered so far, that a fair crop of fruit, half swelled or more, is for the first time noticed to be attacked, and then the question is—what remedy to apply? Water is found unable to stay the ravages of the little marauders, and some other auxiliary must be put in force; one of the best is partial shading. For that purpose, a slight colouring the glass with lime-wash is useful; if this be used, let it be done outside, as it does not easily wash off with rain, and leaves so gradually, that the loss is imperceptible; flour and water adhere less firmly to the glass, and ought to be applied inside. This shading being more congenial to the welfare of the plants than to the insects, enables the former to advance, not so fast, certainly, as when enjoying the full amount of unobstructed sunshine, yet sufficiently so as to leave their enemies in the rear. Perhaps, however, this remedy is insufficient, and the enemy keeps advancing; some other means must be adopted. Now, we have heard some recommend watering with soap-suds as a cure, but, somehow, we never derived the benefit from that plan commensurate with the mischief it occasioned. Soap-suds usually leave a coating on the leaves of plants of a thick glutinous matter, which, in point of substance, very much resembles paint, and is scarcely less difficult to remove. It is, therefore, highly injurious to the delicate foliage of the melon, rendering them all but useless for the purposes intended. Their numerous pores being all but sealed up, they languish and die. Dabbing on soapy lather is only another mode of effecting the same object, that unless assiduous waterings at the proper times and shading as above be able to combat the evil, recourse must be had to that all-important insect-killer "sulphur," which, however, must not be applied as our correspondent mentions, in dusting the leaves, but in placing it in such a manner that its fumes will act on the insect without its coming in immediate contact with the plant. Now in a pit heated by flues or hot water, this object is easily effected, as scattering some along the heating contrivances effects the purpose at once. Not so, however, the common dung frame, in which we believe the great mass of melons grown in the summer months are produced. Here something on which the warmth of the sun may act must be put in requisition; for that purpose paint the inside of the box with a mixture of clay and sulphur, the former is simply to give it substance so as to adhere, for which anything else may be substituted. In addition to this, paint a few pieces of slate, tiles, or small pieces of board in the same way; these pieces lay carefully under the parts of the plant most affected, and the sun acting on them occasions their emitting that vapour so obnoxious to this insect, as it is well known that it is only the gas generated by this substance becoming warmed, to a certain extent, that proves fatal to this and other members of the lower creation, that we regard it almost innocuous at a low temperature; in other words, we think its utility is increased the more we can smell it, which everyone knows is most done in a bright sunny day, or when subject to fire-heat in some shape. Now as we have used these painted slates with success, we strongly urge on the amateur, whose plants are threatened with red spider, to think of that in time. Remember, we only advise their adoption when plain, clean, soft water has failed to stay the progress, or effect a cure, while he may apply both remedies at the same time; the coloured slates by day, and watering all over at nights, taking care to remove the slates when he waters, which, however, is quickly done. We will not affirm that he will be able to restore plants once attacked to the condition of those never so afflicted, but probably he will be able to maintain them in sufficient health to ripen the crop; the latter part of which time he ought to be very careful in giving no more water than just sufficient to maintain the foliage in health. J. Robson.

KING'S PATENT SAFETY HIVE.



My first invention of hives with drawers (an engraving of which, and a notice by "A Country Rector," appeared in No. 186 of The Cottage Gardener), clearly satisfied me that this is by far the best method to be adopted for simple and easy management, but in making use of these hives, I found there needed some improvement to gain the desired end—a *certainty* of obtaining the honey in a pure state, with store-room in proportion to the size of the hive, to prevent swarming, to make it more simple in its management, and at the same time to provide means for procuring new combs when the old ones should have become injurious to the prosperity of the hive.

To accomplish these objects, I was obliged to alter the construction of the hive materially. First, to be certain of obtaining pure honey in the drawers, I made them smaller; and to prevent swarming with more certainty, I increased their number from three to eight, which, on an average, contain 4 lbs. each, making store-room for 32 lbs. of pure honey; and that the drawers might be moved from one part of the hive to another, according to the directions given in the pamphlet, I changed the entrance to the drawers from the side to the bottom; and that I might be certain about its preventing swarming, I stocked it with two swarms instead of one. Also, that the hive might be kept from observation while on trial, I constructed it so that the entrance for the bees was made on the side containing the drawers, they being kept from observation by a piece of plain board. Being thus constructed, I had to perform every operation in front of the main entrance to the hive. In this position, I changed the drawers from the middle to the top three times in one day. In a short time the bees were at work in eight drawers at one time, presenting a beautiful specimen of the art of bee-keeping, and producing at the end of the season 34 lbs. of the purest honey ever seen. Some of the drawers contained one solid lump of honey in the shape of a brick; liking the appearance of the combs in this position, I changed the position of some others, and caused the bees to work them in that form, and to prove this to the public, it is my intention to cause the bees to work a drawer of honey with the combs in the shape of my initials, W. K., and to be exhibited at my agent's, Mr. Weatherly, confectioner, 54, Theobalds Road, London, in the course of a few days, where the hive may be seen and explained.—W. King, *Littlebury, near Saffron Walden.*

[Mr. King has printed a small pamphlet, from which the following is extracted:—

"The first thing to be done is to stock the hive: for this purpose it must be unscrewed from the floor-board; the framework can then be removed, and the swarm put in just in the same manner as in the straw hive; it may then remain on the spot till the evening, or be removed at once to its appointed station, *i.e.*, as soon as the bees get settled, which will generally be in about half-an-hour; it may be again placed on the floor-board, the frame and cover put on, and made secure; but take care to have a good swarm, and, if it is a good season, a box or two of honey of the purest and finest quality may be obtained. The manner of taking it will be as follows: it will easily be ascertained when the hive is becoming crowded with inhabitants, by observing them through the windows. When this is the case, unstop one or both of the side entrances, and draw the slides to admit the bees into the three bottom boxes; and as soon as they are observed to hang in clusters in them it is certain they have begun to construct combs. When they have been in this state two or three days, the box must be removed to the top row; in doing this the slide must first be put in, then the protector inserted between the box and the slide; draw out the protector, placing the thumb of the left hand against the end of the slide to prevent it coming out with the protector. In drawing out the protector the box will come out safely upon it, at the same time preventing the escape of the bees. One of the top boxes must now be removed, and the other with the protector put in its place; hold the end of the box with the left hand; while you draw out the protector, take care to draw the slide, and the bees will carry on their work as though they had not been removed; an empty one may now be put in at the bottom, and they will commence their work immediately. This plan may be followed till they have occupied all the boxes. The advantages of removing the boxes are these: it encourages the bees to work at the top, sooner than if the slides were drawn to admit them, consequently disperses the bees from the centre to many different parts of the hive; it affords plenty of store-room, reduces the temperature of the hive, prevents swarming, and the honey is whiter than if the boxes were allowed to be filled at the bottom.

"When a box is quite filled, the same process is to be followed as in removing one; take it to a distance from the hive, and keep the bees confined for about fifteen minutes, occasionally tapping the sides with the handle of a knife or small stick: this will make them anxious to escape; they may then be allowed to return to the hive. Should any linger behind, confine them again, till you perceive them endeavouring to make their escape, when they may be liberated as before; but if you are afraid to do this, remove the one you wish to take to either of the ends in the top row of boxes, and, if the night should be a little cool, the door of the hive may be left open to admit air, which will cause the bees to desert it before morning; the slide may be put in, and the box taken at once, without the least fear of being stung.

"Although the anti-swarming system has its advantages, it has also its disadvantages; for instance, a hive being kept more than two or three years without swarming, the combs will contain a quantity of bee bread, which prevents the queen from laying a sufficient quantity of eggs to keep the hive in a prosperous state.

"I have constructed my patent hive on a principle which will enable the bee master to get the old comb out without destroying the bees or even fumigating them.

"I have invariably found it the best plan to follow the bees in their natural instinct. When the combs in a hive become old, and a quantity of bee bread is in them, do not allow them to work in the small boxes, but obtain a swarm and put it into another of my patent hives, and as soon as the bees get settled in it, take off the frame and covering of the one containing the old combs, raise it from the floor-board, and place the one containing the new swarm on the board, then set the old one on the top of it as quickly as possible; draw the five slides at the top of the bottom hive, and stop up the entrances in the top one, it at once becomes a double hive; this being done in the middle of the day (I mean as soon as the new swarms get settled), no inconvenience will arise from the union; of course this could not be effected without help; it may remain in this state till about the month of October, when it may be taken away. First, put in the five slides to cut off the communication, and if any bees should be found in the top hive, open the entrance of it to let them escape, and they will return to the bottom hive; when they have all left it, it may be taken off: a large quantity of honey is then obtained for the trouble; the other will contain new combs in excellent condition for the next season, and its proper covering may then be replaced.

"If it is thought necessary to feed the bees, this can be easily effected by placing the food in one of the bottom boxes, and drawing the slide. This will be better than feeding them at the bottom of the hive, as it saves the bees the trouble of descending, and being thereby exposed to danger from cold and other causes."]

TULIP SHOWS.

The National Tulip Society.—This Society held its annual exhibition at Birmingham, on Thursday, May 27th. The display made was a very fine one, surpassing, both in quality and extent, any of its predecessors. The blooms staged were from thirteen to fourteen hundred in number, and they were generally in good condition. The exhibition proved, fortunately, to be well timed, the cold easterly winds having retarded the southern flowers, which it was feared, at one time, would have passed their prime.

The competition for the gold medal was a spirited one, thirteen pans being brought together. The one to which the medal was awarded was worthy of the honour. It contained well-defined blooms of "Coupe de Hebe," "Royal Sovereign," and "Captain White." The winning pan in Class A contained superior specimens of "Heroine" and "Royal Sovereign;" the second of "Lord Denman" and "Queen Victoria;" and the third of "Queen Charlotte;" "Captain White" being the only flower worthy of notice in the fourth. The prize collection in Class B presented Strong's "King," and "Duke of Devonshire," in fine strain. The pan which obtained the second prize contained good examples of "Pilot," "Thalia," and the Byblœmen "Maid of Orleans;" the best flower in the third pan was "Princess Royal;" the fourth including splendid blooms of "Zanzio" and "Polyphemus." The first pan in Class C contained very good flowers; with regard to the second, the judges appear to have been in error, in not discovering that two of the flowers which appeared under the names of "Walworth" and "Heroine" were one and the same flower.

The Premier Feathered Flowers were admirable, and well selected; and in their adjudication of the premiums in the other classes, for single specimens, the ability displayed by the judges was very conspicuous, the specimens being judiciously selected, and admirable of their kind. Of the Flamed Bizarres, "Captain White," "Pilot," and "Donzelli" (the latter from Mr. Willmore), were in good strain. In the Feathered Bizarres "Vivid" ranked very high. "Maid of Orleans" and "Gen. Bournanville" (the last-named coming from Mr. Hartland, of Tipton), stood at the head of the Feathered Byblœmen class, and deservedly so. The Flamed Byblœmens formed a good class, all the flowers being in excellent condition; "Queen Charlotte" was the most noticeable feature here. The judges had great difficulty with the Feathered Roses, from the quantity exhibited, "Napoleon," a new flower, and "Bion," taking the leading places in the list. The Flamed Roses were inferior; and the small number of entries in Class F appeared to discredit the propriety of continuing a separate class for Flamed or Beamed Flowers.

The Judges were—Messrs. Lawrence, of Hampton; Wood, of Nottingham; Bromily, of Macclesfield; Bunn, of West Bromwich; and Moreton, of Birmingham. Their labours, we may observe, did not terminate until half-past three o'clock in the afternoon, having occupied five-hours-and-a-half. We append a list of the awards, and of the flowers by which they were obtained:—

The National Tulip Society's Gold Medal, value £7 7s., for the best six Rectified Flowers, one of each class; T. Houghton, Esq., Hems Hall, Nottingham—*Royal Sovereign, Coupe de Hebe, Captain White, Queen Charlotte, Heroine, Triomphe Royale.*

Class A.—Six Rectified Tulips, one of each class; 1st prize, Mr. Godfrey, Chellaston—*Captain White, Van Amburgh, Royal Sovereign, Maid of Orleans, Heroine, Triomphe Royale.* 2nd prize, Mr. C. Turner, Slough—*Lord Denman, Arlette, Polyphemus, Queen Victoria, Triomphe Royale, Royal Sovereign.* 3rd prize, Mr. T. Adams, Derby—*Captain White, Unknown, Queen Charlotte, Heroine, Triomphe Royale.* 4th prize, Mr. W. Marsden, Derby—*Captain White, Seedling never exhibited, Ambassador, Sarah Ann, Lady Jane Grey, La belle Annette.*

Class B.—Twelve Dissimilar Tulips, four of each class; 1st prize, J. Willmore, Esq., Edgbaston—*Lady Flora Hastings, Strong's King, Clark's Thalia, Earl Douglas, Triomphe Royale, Heroine, Duke of Devonshire, Aglaia, Washington, Waterloo, Camuse de Craiz, Friend.* 2nd prize, Mr. C. Turner, Slough—*Thalia, Madame Vestris, Pilot, Duke of Devonshire, Triumph de Leslie, King, Claudiana, Maid of Orleans, George Glenny, Polyphemus, Heroine.* 3rd prize, Mr. J. Edwards, Holloway—*Purple Perfecta, Junius Brutus, Triomphe Royale, Priam, Violet le Grand, Rose Astonishing, General Bournanville, Catalini, Princess Royal, Miss Catharine, Hamlet.* 4th prize, Mr. W. Lymbury, Nottingham—*Captain White, Lord Milton, Donzelli, Lord Sandon, Seedling Mrs. Lymbury, Mantua Ducal, Baquet, Prince Eli, La Vandikken, Sarah, Bacchus, Polyphemus.*

Class C.—Nine Dissimilar Tulips; 1st prize, T. Houghton, Esq.—*Heroine, Abercrombie, Princess Royal, Emperor of Austria, Victory, Queen Charlotte, Royal Sovereign, Triomphe Royale, First-Rate.* 2nd prize, Mr. J. Parkins, Derby—*Walworth, La Bien-aimee, Diamond, Heroine, Venus, Aglaia, Sovereign, Britannia, Shakspeare.* 3rd prize, Mr. T. Adams, Derby—*Royal Sovereign, Heroine, Maid of Orleans, Pilot, Triomphe Royale, Enchantress, Captain White, Princess Royal, Cornelius.* 4th prize, Mr. C. Turner, Slough—*Princess Royal, Midland Beauty, Glory of Abingdon, Lady Stanley, Triomphe Royale, Purple Perfecta, Glencoe, Gibbons' No. 2, Albion.*

Class D.—Best Feathered Flower in each class, selected from the classes—*Feathered Bizarre,* premier prize, Mr. J. Parkins, Derby (*Charles the Tenth*). *Feathered Rose,* premier prize, Rev. S. Cresswell, Radford (*Agnes*), seedling. *Feathered Byblœmen,* premier prize, Rev. S. Cresswell (*Prince of Wales*).

Class E.—Single specimens—*Byblœmen, Feathered;* 1st prize, Mr. Thorniley, Heaton Norris (*Maid of Orleans*); 2nd, Mr. T. Adams (*Princess Royal*); 3rd, Mr. C. Spencer (*Victoria Regina*); 4th, Rev. S. Cresswell (*Sarah*).

Byblœmens, Feathered and Flamed.—1st prize, T. Houghton Esq. (*Princess Royal*); 2nd, Mr. Thorniley (*Queen Charlotte*); 3rd, Mr. J. Hartland, Tipton (*General Bournanville*); 4th, Mr. Parkinson (*Lord Vernon*).

Bizarres, Feathered and Flamed.—1st prize, Mr. Godfrey (*Captain White*); 2nd, Mr. W. Artle, Melbourne (*Pilate*); 3rd, Mr. Frearson, Nottingham (*Lord Milton*); 4th, Mr. J. Edwards, London (*King*); 5th, J. Willmore, Esq. (*Donzelli*).

Bizarres, Feathered.—1st prize, Mr. R. Dixon, Manchester (*Charles the Tenth*); 2nd, Mr. C Thorniley (*Vivid*); 3rd, Mr. Parkinson, Derby (*Magnum Bonum*); 4th, Mr. R. Dixon, Manchester (*Colbert*).

Rose Feathered.—1st prize, Mr. C. Spencer (*Heroine*); 2nd, Rev. S. Cresswell (*Napoleon*); 3rd., Mr. R. Dixon (*Baquet*); 4th, Mr. R. Dixon (*Bion*).

Rose Feathered and Flamed.—1st prize, Rev. S. Cresswell (*Vicar of Radford*); 2nd, Mr. Parkinson (*Aglaia*); 3rd, Mr. Parkinson (*Triomphe Royale*); 4th, Mr. W. Lymbury (*Grand Rose Desire*).

Class F: *Flame or Beam.*—1st prize, Mr. G. Mills, Alderly (*Holmes's King*); 2nd, Mr. S. Lakin, Derby (*Oriflamme*); 3rd, Mr. S. Lakin (*Pilot*); 4th, Mr. Turner, Slough (*Gibbons's No. 4*); 5th, J. Willmore, Esq. (*Lord High Admiral*). (*Greenhouse and Garden.*)

Amateur Tulip Society.—Ninth Annual Exhibition held at the Horns Tavern, Kennington, on Monday, the 24th of May, 1852.

1st prize to the Rev. Thomas Jephson, Hanworth House, for *Holmes's King, Gibbon's Princess Royal, Lalla Rookh, Polyphemus, Surpasse Pompe, Vivid, Cerise Belleforme, Catalini, Lachesis.*

2nd prize to Mr. G. F. Delaforce, Kentish Town, for *General Bournanville, Royal George, Triumph de Lisle, Dickson's Duke of Devonshire, Marcellus, Brown's Ulysses, Rose Brilliant, Count Vergennes, Claudiana.*

3rd prize to Mr. Wallace, Petersham, for *Holmes's King, Duke de Bouffleurs, Roi de Siam, Dickson's Duke of Devonshire, Marcellus, Cenotaphium, Rose Camuse, Aglaia, Lady Jane.*

4th prize to Mr. C. L. Crook, Brixton, for *Gibbons's Princess Royal, Bloemart, Royal George, Polyphemus, Vivid, Strong's King, Crook's Fanny, Madame Vestris, Fleur des Dames.*

5th prize to Mr. Charles Williams, Kennington, for *Victoria Regina, Lawrence's Friend, Gibbon's Princess Royal, Gibbon's Pilot, Albion, Marshal Soult, Madame Vestris, Aglaia, Lucetta.*

The following stand, exhibited by S. Sanders, Esq., of Staines Villa, was pronounced by the censors to be the best in the room, but was disqualified for not containing the requisite proportion of Roses:—

Franklin's Victory, May's Sir H. Smith, Sander's Lord Hardinge, Salvator Rosa, Polyphemus, Cerise Belleforme, Gibbon's Pilot, Rose Brilliant, Bloemart.

Prizes were also awarded to the three best flowers exhibited, as follows:—

To the Rev. Thomas Jephson, for the best Byblœmen, *Gibbon's Princess Royal.* Mr. Delaforce, for the best Bizarre, *Dickson's Duke of Devonshire.* Mr. Lane, of Wycombe, for the best Rose, *Cerise Belleforme.*

And for Tricolors as under:—

1st prize to Mr. Delaforce, for *Lord Melbourne, Lucullas, Lady Lascelles.* 2nd to Mr. Bushell, for *Smith's Duke of Wellington, Ariadne, Black Duke.* 3rd to Mr. Wallace, for *Duke of York, Lucullus, Carlo Dolce.*

A Seedling prize was awarded to Mr. Crook, for a Byblœmen broke this year, called *Champion.*

HARDY BORDER FLOWERS.

PHLOXES.

Phlox procumbens and *subulata.*—These two very showy plants should be seen in every one's garden, as they are two of the most hardy, and perhaps the least eaten by the slugs, these creatures being the greatest enemies of all the Phloxes. These two Phloxes make pretty clusters as front plants in the mixed borders, and are very suitable rock-plants, where there look as if just at home; but in beds to themselves they produce such a sheet or mass of bloom during May, that one can hardly look at its beautiful striking pale red, or flesh-coloured, mass of light. Their little trailing stems lie close upon the ground, and covered with flowers from their tips to the base of their stems along the

upper side, yield a succession of flowers, produced at the points first, and so on successively. The plants being evergreen, the beds look in good keeping with other beds even when out of bloom, and the bed once made may stand for I do not know how many years. The *procumbens* is rather the strongest grower of the two, therefore requires a little cutting in or thinning round its edges. This trimming, also, may be occasionally required in the *P. subulata*. Those who have extensive flower gardens, and much to do in the way of bedding-out, yet are not overburdened with the means to do it, will find such beds most useful, for they continue for many successive years. I know a first-rate garden, and a first-rate gardener at the head of it, where there are no less than sixteen beds of the *Campanula carpatica* sprinkled over the grounds. These, I thought, were too much of a good thing, but I was told it saved trouble; a bed was filled, and that the plant made very pretty and useful beds too; for what with its being cut away, or thinned out, the plants were green, and scattered more or less with flowers from July up to the end of the season. This may be all true; yet if eight of the beds had been filled with the white variety, and eight with the purple of the Campanula, perhaps it would have been better.

But I must not run away from my Phloxes. As I said before, these will only require to be trimmed, or nipped in, once in a way round the edges, and a little top-dressing once a year, either in February or March, as the season or weather may be, for border dressing. Leaf-mould and turfy loam, half-and-half, well broken up and run through a coarse riddle, is all the nicer to handle; then tickle this in amongst the plants with the hands, pulling out every weed, should one be seen, and every slug too. Also stir or open the earth, where it can be done, as the work goes on. Do it as though you loved the plant and the little labour too. About twelve years ago we planted out a small bed of the two plants, half with one and half with the other, and the *procumbens* being a little the strongest grower, it was occasionally necessary to thin out or shorten a little across the centre of the bed. This little bed has extraordinarily attracted the attention of visitors through these gardens every year during May. In this bed these plants stood about ten years, and, I think, might have stood another ten years for aught I know, but, wishing to have a larger bed of it, in October, 1850, we prepared another bed, had it dug up deep, and added a good portion of leaf-mould and turfy loam; the greatest portion loam, as our garden soil is very light. This being again well incorporated with the common soil, and all being made ready to receive the two plants mentioned, as much of the old bed was taken up as was required, and divided into the smallest single rooted bits, but some were apparently without roots. These bits were all dibbled in four inches apart every way over the bed, and six inches from the edge all round; a little water was given to settle them to the earth, just as we should prick out a bed of young celery plants, and, as is a custom with us always after pricking out a new bed of any plant, we used our lime bag and just dusted the plants over slightly with quicklime dust. This always prevents the worms from drawing the plants out of their places before they become established, and often destroys a slug or two at the same time, or prevents others from coming to eat up the plants during the night. Now in this Phlox bed the use of the lime bag was often put into use, because they took longer to become established. This, with frequent earth-stirring carefully among the little plants, and top-dressing as usual in the spring, produced a splendid bloom again in May, and just the same now. No one can pass the bed without being struck with its beautiful mass of bloom. Another bed of the same size, just opposite, is filled with the Dwarf Gentianella (*Gentiana acaulis*). This bed was opposite the old one for about ten years, and was moved at the same time opposite the new one. This was prepared in the same manner. If there was any difference, a little more loam was added to the leaf-mould, and instead of being pulled apart into single bits, the Gentianella plants were divided into pieces about three to four inches across with the hand, not chopped in bits with the spade as many are so fond of doing, and planted in the bed just one foot from centre to centre of each bunch over the whole bed. Of course we selected the most likely pieces to flower the following season, and a pretty bloom we had, as we have now from twenty to forty blooms upon a bunch, and no doubt next year from thirty to fifty, and so on probably for years.

How many times have I been asked, What did I do to make these plants flower so? Now I had but little trouble to say how they came to flower so well, year after year, was because the plants were not in any way injured with the spade at border-dressing times, or suffocated with other plants between them, or too near them, as they would be liable to in the mixed borders by the careless; not but what a plant or two of some dwarfish kinds of annuals might be sown in the spring in the centres, between the Gentianellas, to flower in the summer, such as the *Collinsia bicolor*, or *Clarkia pulchella*, and the like, allowing only just a plant or two in each spot, not a large overwhelming bunch, such as would over-crowd the Gentianellas. This is another ready-made bed for many years, and no one can deny its beauty. Even if no annuals were sown, it is always in good keeping with other beds, being preserved free of weeds, and only requires the earth to be stirred, and a little top-dressing in the spring, just as for the Phloxes. When out of bloom all the flower stalks should be cut away.

Phlox nivalis. — This little white Phlox resembles the *subulata* very much in its appearance, but it is nothing like so hardy. We planted this out in a little bed, thinking it would stand all weathers like the other, therefore we lost it. I remember seeing a beautiful bed of it in the gardens belonging to Sir W. Heathcote, at Hursley Park, where it stood some years, but the end of it I do not know. When this plant comes to my hand again, I will see if we cannot keep a small bed of it; of course I shall take care to keep a small stock of it in pots for winter protection.

Phlox reptans, or *P. stolonifera* as it is called by some authors, and its variety, *crassifolia*, which variety is also called *verna* by many. The variety is far superior to the species, being a freer grower altogether. Its flowers are of a deep and purplish red. These two plants are as hardy as the two first mentioned Phloxes, but unless one's eye is always upon them, the slugs will destroy them during the gloomy winter months, as these, like the others, grow close upon the ground, forming the better harbour for these vermin; but six or eight strong cuttings placed into six-inch pots toward the end of July, watered, and placed in some cool situation, soon become rooted, and make nice bunches for the ensuing year. Let the whole pot of cuttings be turned out to form one compact bunch in the mixed flower-border. Do this towards March; or such pots of cuttings make pretty specimens to flower in the conservatory if shifted into larger pots. About that time, the whole bunch put into larger pots is better than to divide them. This Phlox, when thus treated, is worth a place in the pot collection. The pot full of cuttings make a better bunch, either in the open border, or to be larger potted, than dividing them and singling them out into single plants. T. WEAVER.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

RED SPIDER (*R. S. E.*).—You will see an article by Mr. Robson on the treatment of red spider on melons. Your *cucumbers* we consider have been good indeed, only we must observe that, in obedience to many others of nature's laws, those which bear very abundantly at first, do not always continue doing so for a lengthened period. We have known cucumbers keep on producing good useful fruit for eight or nine months, when, by disposition or management, their bearing was spread over so long a time; while we have seen them exhausted in as many weeks by a contrary course. The appearance of your plants will intimate how you ought to act; if they are still vigorous, let them bear; if they appear to languish, and seem unable to bear the full sun, cut all fruit off, thin the vine, and water well, occasionally using liquid manure.

VINE WITH WHITE POWDER ON THE LEAVES (*W. Richardson*).—Is the vine in the large house, from which you have taken the branch into the small one, similarly affected? We should like to see a leaf. We fear, from your description, that you have got the mildew. Probably it came from keeping the house too close. You are quite right as to the remedy, if this is the case; namely, sulphur; but you must not on any account think, as you hint, about *burning* it, or not a green thing will be left in your house. Smearing hot-water pipes, or a hot-water plate, with sulphur, will do good even now, and act as a preventive; but your chief remedy, if your vine has really got the mildew fungus, is to dust

the parts affected liberally with sulphur, and keep the parts shaded until the mildew is destroyed. Syringing with water, in which a handful of sulphur and half a handful of lime have been mixed up with about six gallons, and using it when clear, will also be beneficial between the dressings.

Unfruitful Blossom (*A Subscriber*).—We really do think your apricots and plums are liable to extreme drought. Such is often the case with trees planted close to dwelling-houses, and which are frequently planted in a loose, hungry foundation soil. Only observe the apple and the black currant how they will cast their fruit in dry weather if in loose soil. Pray see if this is the case, and if so, administer manure-water freely in all dry weather. Three ounces to a gallon of Peruvian guano, adding some soap-suds, will be found very good. Top-dressings would be as useful. See an article four or five numbers back.

Vine-blossom Unfruitful (*A Constant Reader*).—If your vines succeeded well previously to your alterations, there can be no doubt that the vines have been much injured by the operation. Such injuries, however, are recoverable; we would sooner have your case than a deep and damp border one. Try and compensate them by good top-dressings—the application of liquid manure, &c. This will induce their forming a volume of new fibres. Let them ramble more freely than usual for a month after the first stopping; this will infuse new vigour; and be sure you ripen your wood well.

Young Turkeys (*E. Hollister*).—It is probable that the death of the young turkeys after scouring proceeded from getting wet. Until after they are fledged they should never be allowed to get wet, nor to run out into the grass until the dew is quite off. Nettle tops chopped with their curd and barley-meal is very good for them. Young turkeys, like other poultry, require small stones to assist digestion. When young chickens droop their wings, and look poorly, I give a small pill of Barbadoes aloes; as this answers well with young pheasants also, I think it likely to succeed with young turkeys.—Anster Bonn.

Bees not Working (*R. A.*).—Your bees being comparatively idle, and only a few young bees occasionally showing themselves, intimates that there is either no queen, or an unproductive one in the hive. Join a second swarm to it as soon as you have one.

Moving Hives (*F. Lewis*).—By no means shut the bees in before moving them. They will, in all probability, swarm before Midsummer; if so, place the swarms in their new locality, and remove the old stocks *immediately* after swarming, a mile. If they do not swarm, remove them as they are, *two* miles from their present place, and then after awhile back to the new position on your premises.

Swarm Returning.—*E. M.* says:—"A hive of bees swarmed on Sunday the 23rd of May; the swarm was put into a new hive, and at night they were placed about eight or ten inches from the old hive, under the same covering; the following evening I examined the new hive, and there was not a bee in it." It is not unusual for swarms to return to the parent stock after being hived. They will, in all probability, swarm again in a few days; when they swarm, place them at a greater distance from the old hive.

Bees (*Ignoramus*).—Mr. Carter, seedsman, High Holborn, London, perhaps has the seeds of *Kalmia latifolium*. There are numerous objections to external entrances to the upper boxes of hives. Prizes for glasses of honey are given by many Horticultural Societies.

Berries of Salanum pseudo-capsicum (*G. B. K.*).—These berries, usually called Winter Cherries, are not known to be eatable, and the family is too poisonous to be trifled with. The plant is a native of Madeira.

Tenant Removing Trees (*Verax*).—We are glad that you agree with us in opinion, but there is no reason to repeat even more fully what has been said. We never doubted that the tenant has no right to remove them.

Bees Injuring Flowers (*H. S.*).—Bees certainly hasten the fall of the petals, and so does any thing that promotes the impregnation of a flower.

Peacock (*X.*).—This bird is more destructive in a garden than any other of our domestic poultry.

Advertisements (*N. O. S., &c.*).—The price varies with the length. Thanks for the particulars concerning the Cochin-China fowls, but there is nothing in them requiring publication.

Early Swarms.—*A Country Vicar* is thanked for his explanations, &c. He states that in the neighbourhood of Horsham, Sussex, there were several swarms on the 16th of May, and one or two earlier.

Elder Wine, &c.—*M. R.* would be obliged by a *good* recipe for making *elder wine*, and for *preserving plums* in jars without either sugar or filling the jars with water.

Insect on Vine (*C. Harvey*).—The little beetle eating your vine-leaves is the Vine Weevil (*Curculio betuleti*). There is no remedy but holding a sheet under the branches at night, and shaking down from them these little marauders.

Names of Plants (*M. C. E.*).—Your greenhouse plant is Jointed-stemmed Caccalia (*Caccalia articulata*). The blue flower we think is *Lithospermium purpureo-cœruleum*, Purplish-blue Gromwell. (*F. G.*).—1. *Habrothamnus fascicularis*. The Heaths are, 2, *Erica hybrida*, and 3, *E. Cavendishii*.

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Advertisements.

WEEKLY CALENDAR.

M D	W D	JUNE 17—23, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
17	TH	Puff-ball seen.	30.383 — 30.209	66—38	N.W.	—	44 a. 3	17 a. 8	sets.		0 53	169
18	F	Mullein flowers.	30.402 — 30.231	71—55	W.	05	44	18	9 a 10	1	0 48	170
19	S	Viper's Bugloss flowers.	33.160 — 30.108	75—49	S.W.	—	44	18	10 0	2	1 1	171
20	SUN	2 SUNDAY AFTER TRINITY. Q. VIC. AC.	30.098 — 30.035	81—47	S.W.	—	44	18	10 42	3	1 14	172
21	M	QUEEN VICTORIA PRO.	30.883 — 29.689	87—55	S.E.	—	44	18	11 14	4	1 27	173
22	TU	Sun's decl., 23° 27′ N.	30.014 — 29.813	67—41	N.W.	—	45	19	11 41	5	1 40	174
23	W	Thistle-upon-Thistle flowers.	30.248 — 30.163	67—35	N.W.	—	45	19	morn.	6	1 53	175

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 72.7° and 50.2° respectively. The greatest heat, 93°, occurred on the 19th in 1846; and the lowest cold, 34° on the 18th in 1830. During the period 99 days were fine, and on 76 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

(*Continued from p.* 143.)

MYOSURUS. MOUSE-TAIL.

GENERIC CHARACTER.—*Calyx* inferior, of five spear-head shaped, concave, coloured, spreading, deciduous leaves; spurred at the base, below their point of insertion. *Petals* five, very small, shorter than the calyx, tubular and bearing honey at their base, expanding obliquely at the inner side. *Stamens* five, or more, the length of the calyx. *Anthers* terminal, erect, of two narrow parallel cells. *Styles* none. *Stigmas* solitary, minute. *Germens* very numerous, egg-shaped, seated on a long, tapering, upright *receptacle*. *Seeds* oblong, acute, naked, imbricated all over the surface of the elongated, columnar, pointed *receptacle*.

MYOSURUS MINIMUS: Mouse-tail.

Description.—It is an annual. *Root* fibrous, small, annual. *Leaves* all springing direct from the root, upright, unequal in length, narrow, rather broadest at the top, flat, slightly channelled on each side, usually smooth, and rather fleshy, but sometimes hairy, yellowish-green, but reddish at the base. *Flower-stems* four or five, from two to four inches high; longer than the leaves, upright, round, smooth, a little thickened at the top, each bearing one flower. *Calyx* sepals, or leaflets, concave, with the claws lengthened behind, tapering to a point, and pressed to the flowering-stem. *Petals* light yellow, with a pore or nectary at the base. *Stamens* varying from four to twenty. *Germens* two or three hundred, green, forming a long spike raised much above the other parts of the flower, and resembling a mouse's tail, especially when the seeds are ripe. *Seeds* wedge-shaped, outer side rusty-coloured, other sides blackish.

Places where found.—Not very uncommon in corn-fields, meadows, and pastures, where the soil is gravelly; especially where liable to be flooded.

Time of flowering.—April to June.

History.—The generic name is from *mys*, a mouse, and *oura*, a tail; the specific name is *minima*, least. This plant is one of the rare instances of a very great disproportion of males and females in the same flower, yet the seeds usually are all prolific. It is the only English species. The whole plant is acrid. Parkinson says that it was sometimes called *Blood-strange*, but, he adds, "I think corruptly from blood-staying;" "the country people apply it not only to those that bleed at the nose, by bruising the leaves and putting it up therein, but also to stay the much bleeding of wounds, and to heal them."

IT having been demonstrated long since that the roots of plants can take in food for their support, and for the maintenance of their growth, only either in a liquid or gaseous state, it is somewhat surprising that cultivators have not been more attentive to the application of manures to their crops in one or other of those states. The absence of such attention is only explicable upon the too general rule that old practices, like old habits, are difficult to depart from.

The nearest approach to the general application of manure in a liquid state, is the old practice of turning over stable manure until reduced to a soapy mass, then much more readily soluble in water than the crude litter when first heaped up from the yard. In some very large farming establishments, the process of fermentation or decay, which renders it thus soluble, is carried on in waterproof tanks, and every care is taken to preserve the liquid which drains from it. This is another step in the right direction, and we expect, as we hope, to live to see the day when such manure is applied only in a liquid state, for such a mode of application is very much the most economical. *One ton of stable manure properly decomposed, and its soluble parts removed almost as soon as formed, and applied to growing crops in a liquid state, would be as productive of as much benefit to those crops as five tons of the same manure applied in a solid form.* This is a truth that will very soon be admitted by all who have energy sufficient to try it practically; and we shall then see manure applied by the water-cart and the water-pot, instead of as now by the dung-cart and wheel-barrow.

To illustrate and enforce our opinion, we will at present only quote the following from a most valuable pamphlet published by the Board of Health, entitled *Minutes of Information on the Practical Application of Sewer Water and Town Manures to Agricultural Production*:—

"The greater proportion of what is lost from decom-

position and evaporation, by the retention of manure in the dry state, or in its application as top-dressings, is saved by its being diluted and carried in water beneath the surface of the soil amongst the roots. The more minute subdivision of manures in the liquid form facilitates their rapid decomposition and complete absorption, and there are various examples to show that one load of solid manure, properly liquified with sufficient water, will have four or five times the fertilising power that it would have if applied in the solid form.

"Mr. Barber, of Muirdrockwood, in Kirkcudbrightshire, has twenty-seven acres of land before his house, naturally of so poor a quality that it originally served for the feeding of *two* cows only, and that poorly. He put the dung of forty cows with that of four horses which he kept in a stable close to his house, into a tank, through which he passed a rill of water, and irrigated with the solution twenty-two acres of the poor land below. With the miscellaneous refuse of his house and scullery five acres were irrigated. The produce from the same twenty-seven acres of land, fertilised by the liquid manure, now enables him to fodder *forty* cows and *four* horses. An important experiment was also tried, showing the comparative results of the effects of liquid and solid manure on similar land. There were some knolls of land close by, which being elevated, not having the use of the hose, he could not irrigate; upon this land he could only apply manure in the solid form as top dressing, and whilst he has obtained four or five fold crops by the application of liquid-manure, with all the top-dressings he has been able to use he has never succeeded in getting more than one-and-a-half fold of produce by the dung unliquified.

"On Mr. P. W. Kennedy's farm at Myer Mill, in Ayrshire, the general result of the application of the farm-yard manure in the liquid form, and its distribution in four times its weight in water, by means of steam power through fixed and flexible pipes, was, that five times as many cattle were fed on the same ground as had been fed previously, and this without any addition to the manure bought for the farm, and with an increase instead of a diminution of the fertility of the soil.

"The recent and important experience of Mr. Pusey presents analogies to the instance above cited.

"Being, as he states in a letter to Mr. Chadwick, like most arable farmers, in difficulty as to the live stock for converting profitably his straw into dung, he made arrangements for decomposing it in water, liquifying it, and throwing it in the liquid state upon the land, availing himself of a very small rivulet, which he made to run through his farm-yards, and catch the juices of the dung after rain, and liquify the solid manure there. At such times he takes care 'that the water shall be so applied as to run *into* the land, and not escape beyond it into the outfall. This is easily contrived by the waterman.' With this stream, (which is 'muddy during and after rain from the washing of the manure of farm-yards, the organic refuse from the houses in Pusey, and from the roads,') when he considers it in its best state, he fertilizes a considerable area of land, previously not worth more than about 5s. per acre, and from that same land, and by these means, he obtains four and five fold crops, an extent of fertility far beyond anything obtained or practicable by top-dressings, with the available manure in the solid form.

"Mr. Lee, the inspector, in whose Report Mr. Pusey's work is described in detail, thus states the effect of the irrigation with the liquified manures:—

"'The whole of the annual produce from any of this land has not been either measured or weighed; but Mr. Pusey said, while we were examining the part first irrigated, that the first crop cut was estimated at a ton-and-a-half to the acre. Sheep were then turned on repeatedly, and the whole annual produce was estimated to equal the keep of thirty-six sheep per acre during five months.'

"It appears to be important to bear in mind the fact already referred to, in the experience of horticulturists, that an extent of dilution such as extinguishes smell, is about the best for absorption and assimilation by the plant; that all the progress of horticultural improvement is made by diluting more and more, and applying the diluted manure more and more frequently. A very experienced horticulturist, Mr. Pince, of Exeter, states that he has arrived at this point, that he applies the liquid manure twice a week, and with one of plain water in the interval between each watering with the liquid manure. He gets rid of fibrous matter, and, to use his own expression, 'I give this water with the manure in it so clear, that if you were not to know what it was, you would not object to drink it.' The conclusions are all in favour of frequent applications of manure in solution, of getting rid as much as possible of fibrous matter, and of much greater dilution than has been hitherto customary, or indeed generally practicable while the liquid manure has to be carried by human or animal power.

"One practical reason for this course on the part of horticulturists is, the perception by them, that not only does the fibrous matter tend to clog the pores of the soil, or in some such way impede the process of vegetation, but that every portion of fibrous matter is apt to become a *nidus* for animalcules. It commonly escapes the farmer's attention, that each mass of exposed dung becomes a source of devastating insects, which he unwittingly in that form spreads over his fields, frequently with the seeds of unsuspected and injurious weeds.

"A further reason, however, for the superior success which has attended all careful applications of manure in the liquid form appears in the fact that all solid matter, the separate particles of which are visible to the eye, must be decomposed before it can be absorbed by a plant. The most powerful microscopes fail to detect the apertures to the spongioles in plants; if, therefore, there be any fibrous matter or particles of manure visible to the eye, the fact is conclusive that that manure is not in a fit condition for assimilation by the plant. 'All attempts,' says Bousingault, 'to make plants absorb solid bodies in a state of minute division, and held in suspension in water, have been ineffectual. In these attempts the spongioles have acted precisely like perfect filters, with which those that we employ in our laboratories cannot be compared. Further, the weakest solutions are not entirely absorbed by certain roots; a kind of separation takes place; a portion of the dissolved salt appears to abandon the water at the moment of its penetrating the spongiole.' When the roots of plants are placed in solutions of gum, sugar, or starch, they thrive, if the solutions are thin; but if thick solutions of these substances be prepared, the plants die in them. Sir Humphrey Davy attributed the non-absorption of the thick solution and the death of the plant to the thick matter blocking up the pores of the vegetable tissue."

GOSSIP.

The *Crystal Palace Company* is formed; the applications for shares were nearly double the number that could be supplied; and shares are at a premium. The following particulars are from the Company's prospectus:—

"A site close to London, but out of the reach of its smoke and brick walls—beautiful, picturesque, and open—has been secured on the Brighton Railway. The Palace once built upon it, will have a railway station within the building itself, communicating by an exclusive line of rail with the London Bridge and Bricklayers' Arms Stations, which are the most readily accessible to the densest portion of the London population, and from which the Crystal Palace Station will be reached by special trains in ten minutes. A line is also in contemplation which will connect the Crystal Palace with the Waterloo and Vauxhall Stations. One small payment will cover both the admission and the railway conveyance to and from the Crystal Palace. Thus, in a few minutes, without stoppage, the visitors will find themselves once more within the precincts of their old and favourite resort.

"The Institution itself it is proposed to make worthy of the country and of the views with which the Crystal Palace was originally raised. Refined recreation, calculated to elevate the intellect, to instruct the mind, and to improve the heart, will welcome the millions who have now no other incentives to pleasure but such as the gin-palace, the dancing saloon, and the alehouse afford them. The triumphs of industry and art, and the natural beauty of flowers and plants from every climate, will meet together at the Crystal

Palace. Within its walls, all the charms of the country will be perpetuated through winter and summer, and wind and rain, and the well-known inclemency of our climate will form no obstacle to the perfect enjoyment of visitors admitted to the genial atmosphere of a winter-garden eighteen acres in extent.

"At Versailles the great attractions of the Palace are its fountains; at the Crystal Palace it will be possible, for the first time in England, to enjoy a spectacle which has always been regarded as the most grateful and soothing that even Royal munificence has been able to command. With our power of steam and mechanical resources, it will not be difficult to render the fountains of the Crystal Palace the finest in the world.

"The sculptures of the most eminent living artists of every nation, casts of the works of eminent sculptors in every age, architectural remains, and casts of architectural monuments of past and present times, will occupy every salient part of the building. The French, Germans, and Italians will cease to be the only European nations busy in educating the eye of the people for the appreciation of art and beauty. The most interesting models of machinery at work will present to the artizan, as well as to the student, the means of acquainting himself with the processes and the products of every great staple manufacture in the country. The lesson taught in Hyde Park, where the cotton entered in the berry and emerged in the bale of goods, where linen rags were passed through the paper-mill, and issued in broad sheets of instructive literature, will be repeated in the People's Palace, where every great victory of machinery will find its enduring record and safe depository. Geology, mineralogy, and botany will be illustrated on a far greater scale than has ever before been attempted; and trees, plants, architecture, costumes, and manufactures will be so laid out as to present, as far as practicable, a study of every country in the world, with all its natural stores and industrial products. The Royal Commissioners were obliged to take, almost without discrimination, all that were sent to them by local or foreign Committees, and thus many acres of space were filled with useless and uninteresting objects, and the same description of objects was repeated time after time in every division of the building. In the new building, on the other hand, the classification of the objects will be much more complete and instructive, and the vacant space will be filled by beautiful plants, flowers, and fountains.

"Surrounding the palace will be the Crystal Palace Park, constructed with all the peculiarities for which the parks of England are world-famous. One hundred and fifty acres will be filled with every tree and plant which England's atmosphere has adopted or acclimatized. The Crystal Palace Park will be as thoroughly English in its aspect, as the Palace itself will in its contents be a miniature of the world.

"Periodical shows of flowers and plants will be held in the Palace, but the general amusements of the tea garden and the dancing saloon will be strictly excluded. Care will also be taken to secure a supply of refreshments of the best description, but intoxicating beverages will not be sold. In a word, throughout every department of the national work, that character will be stamped upon it which it has already won. The Crystal Palace shall suffer no deterioration in consequence of its removal from its present aristocratic site; shall lose no part of its claim upon the gratitude and applause of the public, by reason of its transmission from the hands of Her Majesty's Commissioners to those of the people."

A correspondent, *T. D.*, writes to us as follows:—

"I never heard of *Tropæolum speciosum* doing so well with any one before, as with E. M. mentioned at page 156. I feel persuaded that the last paragraph of the writer's note ought to be kept in mind. "I live in *a very cold county*." I have seen it grown, and have grown it, planted at the front of a south wall, in a soil that is rather rich, but it never has made much growth with me, nor in other places where I have seen it grown. I have no doubt but that it is owing to our planting it in such a situation that it has not done better. I find here (north-east of Essex) that the *Abutilon striatum* survives through the winter, and flowers well, grown against a south wall. Although it is of the Malva family, it never receives much water, but does well."

The following is from *A Subscriber*, whose address we have:—

"As your publication invites information as to the *Cochin China fowl*, I cannot do better than give you the result of a sale which took place lately at Kensington. The collection consisted chiefly of some birds which had obtained the prize and extra medal at the Birmingham exhibition last December; a few chickens bred from them; about thirty pair of chickens, from eight to thirteen weeks old, and several cocks and hens, &c. I consider one of the extraordinary facts of this extraordinary age, to have it to record that the produce of this sale amounted to a sum bordering on £100. I have attended sales of agricultural stock; I have had a well-bred bull calf knocked down to me for £5, but here that price was commanded by a hen, while her mate fetched the sum of £8 5s. If this poultry mania goes on, our farmers had better convert the bullock-pens into chicken-coops, as fowl will be more profitable than flesh, and the sooner the better, in my opinion, as what can be so detestable as prize beef or prize mutton, covered with mountains of fat. I wonder Mr. Punchard, or Mr. Anster Bonn, do not establish an annual sale somewhere. I had this morning six chickens, the produce of thirteen eggs, so that the little animals have cost me half-a-crown a-piece before they left the shell, and I still have to run the risk of rearing them. In future, to secure a large brood, I intend always to sit two hens on the same day. I think a shilling a-piece for eggs too dear; 6d. is a good remunerative price, and I shall be glad to establish a correspondence with any gentleman possessed of good stock, upon these terms."

We are obliged to Mr. R. Pettit, gardener to Sir H. E. Bunbury, Bart., Great Barton Hall Gardens, near Bury St. Edmunds, Suffolk, for the following particulars relative to the crops in that neighbourhood:—

"*Apples*, abundant. *Apricots*, very abundant, where covered with calico on splines, rolled up in the morning, and let down in the afternoon. *Cherries*, both on the walls, and dwarf standards, a full crop, particularly of Morellas. *Currants*, very heavy crop. *Gooseberries*, an average crop. *Plums*, both on the walls and standards a good crop. *Pears*, both on the walls and standards, an extraordinary crop. *Peaches* and *Nectarines*, an average crop, without protection; trees clean. *Raspberries* and *Strawberries*, abundant promise (now in bloom). *Peaches*, *Nectarines*, and *Grapes* in the houses, a very fine crop. The *Plums* on the walls are now being attacked with insect."

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

BARTON-UPON-HUMBER. First show 14th July. (*Sec.* C. Ball.)

BATH, June 24th, July 29th, Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)

BOTANIC (ROYAL), June 30.

BRIDGEWATER, June 23; Sept. 22. (*Secs.* Mr. J. Leaker, and Mr. J. Hayward.)

BRIGG, July 7th, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)

BURY ST. EDMUNDS, June 25, at Sir H. Bunbury's; July 30 (Picotees); Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)

CALEDONIAN (Inverleith Row), Edinburgh, Aug. 7, Sept. 2, Dec. 2.

CHELTENHAM, Aug. 26.

CHISWICK, July 10.

CLAPHAM, July 8, Sept. 11.

COLCHESTER and EAST ESSEX, June 23, at Mr. J. Taylor's, West Lodge, Lexdon Road; Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.

DERBY, Aug. 4.

DINNINGTON (Newcastle-upon-Tyne), July 14; Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)

Durham, Sept. 8.
Forfarshire (Eastern), July 21 (Brechin); Sept. 15 (Arbroath).
Hampshire, July 1 (Winchester), Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hampton Wick, July 1. (*Sec.* Mr. B. Regester.)
Hexham, Sept. 15, 16.
Hull, June 24, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), June 24, Sept. 9.
Lewes Grand National, July 14 and 15.
Lincoln, July 27, Sept. 14.
Liverpool, June 24, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), June 8†, 22, July 13†, 27, Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Maidstone. Fete. June 24. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), July 9, Sept. 10.
Newbury, June 18, Sept. 3.
North London, Sept. 14; Nov. 23, Chrysanthemum.
Northampton, June 29, Rose and Pink; July 27, Carnation; Sept. 27, Dahlia.
Oxfordshire (Royal), June 23; July 29; Sept. 23. (*Secs.*, C. Tawney, and W. Undershell, Esqrs.)
Peebleshire, July 13th, Sept. 14th. (*Sec.*, J. Stirling.)
South Devon Botanical and Horticultural, July 13; Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), June 17†, 23, July 15†, 21, Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, Aug. 6, Sept. 17.
Whitehaven, July 9, Pinks; Sept. 17, Dahlias.

POULTRY SHOWS.

Agricultural Society (Royal), Lewes, July 12.
Birmingham and Midland Counties, 14th, 15th, 16th, and 17th December.
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).

† For seedlings only.

POINTS OF FRUIT-CULTURE TO BE WELL OBSERVED.

Towards the end of this month, the *breast-shoots* of fruit-trees in general will be inclined to be rampant, especially if in rich soil, and disbudding has been neglected. Now, two or three weeks more neglect will cause the proprietor, in the ensuing spring, to wonder why he cannot have good crops, seeing the expense he has been at. New walls, expensive trees, with long names and showy labels, are all very fine things, but they are only the means to an end, and must not be mistaken for the end itself. Many persons—indeed the majority—give their trees a promissory note, payable several weeks after sight; but trees can no more thrive on promises than mortals. "Really," says Mr. A., "there is such a pressure of work just now; it is always the case; but as soon as Midsummer has passed we shall have a little breathing time, and then we will look over these plaguey trees; surely a fortnight or three weeks cannot make so much odds. These writers make too much fuss by half about such things." This is that most important point of all others to tender fruits—the due and timely control of superfluous spray staved aside; and year after year comes a repetition of complaints, and a repetition of queries concerning failures.

We are here prepared to admit, that to carry out the modern system of warfare against useless spray, insects, &c., a little extra labour is involved during May and June; and as the gardener's labours have progressively increased with the increase of horticultural luxuries, all those, whose means will permit, should allow extra help during those all-important months. This will be a twofold benefit; an act of justice to *themselves*, as well as the gardener, and by no means a loss to the public. It will be seen, that reference is here made to those establishments where a regular gardener is kept, and where other assistance is required. As for small villa gardens, with their peach-tree, their Moorpark, or their Jargonelle, against a wall, with a few pyramid pear and apple bushes, why we would strongly urge on the feminine portion of the establishment the immense benefits of a little exercise in this way; up every morning soon after six, and nipping away at the pears; adieu to dyspeptic symptoms,—begging pardon of the doctors for thus meddling with their professions.

First, as requiring very particular attention, and as richly deserving it, let us point to *the Apricot*. No fruit-tree suffers more from overcrowded spray than this. Blossoms may form abundantly in this smothered condition, and the trees may, in the ensuing spring, be like a garland; but shortly comes complaints of bad setting, which, of course, is attributed to the unusual amount of frost the sufferer has experienced beyond his neighbours. On examining closely blossoms formed under such unfavourable circumstances, it will be found that the greater portion possess a very debilitated condition of pistil—that organ on which, of course, everything depends; indeed, in many flowers it will be found entirely wanting; nevertheless, the corolla may be found perfect as usual. Besides, the encouragement of coarse breast-wood begets a coarse and uncontrolable woody condition, much averse to the fruitful habit in *future* years. It is good practice, therefore, to pinch liberally betimes, especially during the first three weeks in June. All those breast shoots of coarse character, not required for covering naked spaces, may be totally disbudded first; and of those remaining, all that are required to form a nucleus for future spurs may have their points pinched off at once. During this time the caterpillar of the red-bar moth will probably begin its devastations, and these must be hand-picked and crushed constantly. The embryo spurs will now get a fair chance; the sun's rays will penetrate the moderated spray, and well-elaborated buds will be the sure consequence.

Peaches and *Nectarines* we advised about recently; continue, we say, to carry out the practice previously recommended, and there will be no complaints of bad setting in the ensuing spring. If the red spider should threaten, either ply the engine or syringe heavily twice a day, or dust the trees on the back of their foliage with sulphur. We prefer the latter; although we never in these days have occasion to use it, our preventive maxims proving good security.

As for the *Aphides*, if any are such bad gardeners as to have their trees infested in the month of June, we pity them, and advise them to take care that such does not occur another season—it is as much a loss as a disgrace. Of course tobacco in some shape must be resorted to; this will soon settle the rogues.

Figs.—These require much attention during the month of June. If of free growth, they produce a considerable amount of spurious spray, much of which must be stripped clean away. Here the short-jointed shoots are of eminent importance, and such must be carefully preserved. Every shoot which possesses joints of more than an inch apart should, if possible, be done away with at once. This disbudding, however, like most other, should be progressive; and it is well to look over them once a week during this month, first removing entirely the most succulent and gross, and proceeding on the same principle to the end of the month, when most of the superfluities will be done away. In the early part of July it will be well to commence pinching the points of the strongest reserved shoots, continuing such pinching at intervals during the month, and ex-

tending the process into August, being ruled constantly by the amount of strength in the respective shoots.

Currants (Red and White).—No delay must be allowed to take place in pruning back the breast-wood. The ordinary garden shears is as good a weapon as any for this purpose, but will require to be followed by the knife. We take them back to within four or five inches; but about this there is no necessity to be very particular, only care must be taken not to reduce them so as to allow the sun to shine on the fruit. This would ripen them prematurely, and they would be both inferior in flavour and size. Those who seek a high amount of flavour, should farther reduce the breast-shoots when the fruit commences colouring, still, however, leaving a bunch of leaves at the base of each shoot, to attract the sap and partially screen the fruit.

Raspberries.—If the suckers have not been thinned, let it be done immediately: no gardening affair is more apt to be neglected than this. Many otherwise good gardeners may be noticed leaving their rasps smothered with suckers through most of the season. To be sure, it may be generosity, but those who permit hundreds of spawny suckers to remain unmolested, for the sake of having a hundred or so canes to give to their neighbours in the ensuing planting season, are not the men to make the most of a pole of ground. Surely no man in his senses will doubt that such are robbers of the fruit! If it could for a moment be supposed that they do not immediately detract from size in the fruit, it must at least be admitted that they detract from the soil in which they grow, and this has, of course, an indirect influence. We generally reduce the suckers to about five, and pull away the extremely coarse and the very weak shoots, together with all those which ramble far from the parent stool. The double-bearing or autumnal kinds, too, must be carefully dressed; only a few of the strongest suckers retained. They should not be left nearer together than six inches by any means; if more, all the better; for in the autumnal months they require all the light and air possible.

Alpine or Autumnal Strawberry.—It is to be hoped that every blossom has been cut away up to this time; it is worse than useless to permit the plants to exhaust themselves prematurely. They require all possible assistance in the way of regular waterings in dry weather; no success may be expected without this. A mulching is of much service before the blossom-stalks come forth, and the mulch should be covered with slates, or some hard material, to keep them clean. We protest, however, against the use of *large* slates; small pieces are the best, as admitting the rains or waterings to percolate through in a more equal way. R. Errington.

WINTER GARDENS, AND WINTERING PLANTS.

After all, and knowing the whole secret and machinery by which our great exhibitions are got up and kept afloat, if I had ten thousand a year coming in, I would first begin by having my exhibitions at home, according to Mr. Fish's plan. My flower-garden I would prefer to all the exhibitions in the world. Grapes and potatoes, and the like of them I could buy at the shop at one-half of the price I could grow them at; but all the shops and shows in London cannot furnish flower-beds; and if they did, where is the grass, the gravel, the trees, the shrubs, and above all, the scenery to come from? I would have no hybrid, or hybrid-perpetual gardens, but I would have the real thing all the year round—out in the open air all the summer, and in the winter comfortably under a glass covering—all my specimen plants would be exhibited when the frost and snow prevailed; then, instead of calling in paid judges to award prizes, I would make all my friends and neighbours the sole arbiters of my doings—open the garden gate to them the first thing after breakfast, or rather open the breakfast-room door, and let them step out and walk in amongst the choicest things I had, at once, and there stroll about on dry concrete walks, and among my camellias, azaleas, roses, geraniums, and others of my exhibition plants, until they were quite tired, or ready for luncheon. This is a new style of gardening to us about London, and as yet we have only one example of it—the large conservatory of the Botanical Society, in their garden in the Regent's Park. The large conservatory at Chatsworth is too large, and too far off, and the one in the Kew Gardens is too hot for comfort. Indeed, we have been hitherto too far in the wrong direction with all our large glass houses; instead of endeavours to imitate the warm, healthy climate of Pau or Madeira, where the invalid could enjoy a walk or ride, we have all along been putting up houses, as if on purpose to make invalids of the strongest constitutions in the country.

The Botanical Society's conservatory is by far the best and most comfortable in England. What the Crystal Palace may be remains to be proved, but the proof is beyond all doubt in the Regent's Park, and a very large number take advantage of it every winter. I went to see it last winter, and it happened to be a bracing cold day in the shade; but the sun was out, and felt cheerful about noon. On first going in, I thought they were going to have a fête, or some sort of gathering, when I saw so many people about, but I was told there were no more than the usual number who went there almost daily, all the winter, to breathe the pure or purified air, and to take strong exercise. The house was gay with forced flowers; all the plants looked very healthy, the climbers particularly so; but there was one part of the house set off to grow stove plants in, and there nobody seemed to care to go into. I had it all to myself for a long time. Now this shows quite clearly that the right way is not to have any stove plants there, or in similar places, at all, and then the annual expenses would be reduced one-half; but that is not the question that I am on at present. I merely want to give an expression to a very general opinion which I find among all degrees of gardeners, nurserymen, and also among many amateurs, about what is called a winter garden. This opinion has many boughs and branches; but they may all be reduced to one stem and root, and that root is speculation. They say it would be an excellent speculation in such places as Birmingham, Leeds, Manchester, Liverpool, &c., &c., to cover so much ground with glass at a low figure, and to lay it out for a winter-garden, where the inhabitants would be admitted by paying so much each time they entered, or by season-tickets, without bothering themselves about shares, or summer shows, to create funds as at present in some of these places. The Horticultural Society has lately erected a beautiful house for growing roses, the best and cheapest of that class of buildings, so much wanted, that has yet been tried. I believe the society does not intend to heat it by any artificial means. There is another example of a cheap house in their garden, put up a few years since by Mr. Hartley, the great glass manufacturer, and it is some thing between the two that is so much talked of now for covering an acre, or more, for these winter gardens; all the plants, or at least the principal part of them to be grown in the free soil, and not in pots or boxes; those that are thus planted in the large conservatory at the Regent's Park, have answered remarkably well, and by varying the surface of the ground, as is done there, an *apparent* great extent is easily given to a comparatively small space of ground. The money that has been spent on ponderous iron houses of great height for stove plants of no sort of use, and hardly of any beauty, would be

sufficient to cover ten times the extent of ground occupied by them in the manner here spoken of.

Whenever this style of gardening, or any modification of it shall come to be fashionable, it will be found that the practical details are already ripe in the minds of gardeners. As the great experiment, however, is to be first tried with the Crystal Palace, people will rest on their oars for a while to see how that turns out, before much is done beyond Mr. Rivers's orchard-house scheme, and that for roses by the Horticultural Society. Meantime, it would be well if gardeners, who have not yet thought much about this plan, would turn their attention to the subject, and so prepare their minds for what is certainly coming.

I do not hear of anything very new, or particularly good for bedding-out about London. The two *Œnotheras, speciosa*, and *cæspitosa*, particularly the first, have now got vent once more, and parties will be more careful of it for the future. There was a very nice new, or "herbaceous plant," called *Trollius chinensis*, exhibited at the May exhibition of the Botanic Society, a native of China, and next thing to a ranunculus. It is a half-double flower, with bright yellow blossoms as large as those of the European trollius, and if it is a cultivated plant in China, take my word for it, that a good florist might easily turn it to some good purpose. The doubleness appeared to me to be got by cultivation, and why should we not have double trolliuses, as well as double ranunculuses, for the difference between the two is not so much as that between a red herring and a Yarmouth bloater. Mr. Standish, of Bagshot, was the exhibitor, and it is with him that all the recent novelties from China must be looked for. A new race, or a new plant that would yield to the requirements of a good florist, as *Trollius* would be sure to do, would be a good windfall to them, as most of the new things they have been claiming for years past do not add much to their laurels. They made a mess of the calceolarias; spoiled the fuchsias; the cinerarias are going back as fast as ever they advanced; mimuluses and snapdragons they have been breeding in real earnest, and got nothing better than a turn of the lip; while the aquilegias, which sport as freely as the dahlia, without help or encouragement, have been left entirely to one individual, Mr. Grigor, a nurseryman near Forres, beyond the Grampians, and he only retails the sort that was considered old at Brodie when I lived at Altyre, five or six and twenty years ago, just when Mr. Grigor first "broke ground" for his nursery; but aquilegias are capable of better things, nevertheless; and we ought to have whole collections of them offered for sale every season or two, so as to keep in pace with the Larkspurs, and others of the good old-fashioned plants.

By the way, I have to return thanks publicly to a lady near Guildford for another supply of the true old blue branching Larkspur, and which I am assured is just the very thing I wanted. The seedlings are up, and we shall soon be put out of all doubts about them.

Having now got home to my own garden, I must say how I have secured lots of nice varieties, which I owe to the kindness of strangers and friends. I had more plants sent to me about the end of April than I had spare ground to do justice to, and I thought on my Suffolk friend's plan of saving geraniums through the winter, and that founded on it for sending out plants to Australia. It will be recollected that I suggested experiments to be tried on this system through the summer, to see how far it was applicable for home use, little dreaming at the time that I could have any materials for the experiment myself; but so it is, and just now I have the nicest lot anybody could wish for, going on to my satisfaction, all packed in damp moss balls, and I can move them about as I choose, as if they were in pots, and I have no trouble with them. One friend sent me a nice collection of dwarf hardy bulbs, chiefly spring flowers; many were in flower when unpacked, others have flowered since, and all of them are seeding with me in the moss ball. Among them is an European *Cyclamen*, marked "twenty years old" on the tally. There were three seed-pods forming on this bulb, if I may so call it; when it came, the leaves were just over, and if I had never heard of how to manage cyclamens before, this root would have taught me. Certainly these cyclamens should never be dried; mine was packed in the wet moss, and the moss has been quite wet to this day, and I examined the root this morning, and found the seed-pods full-grown, and as fresh as the pods of green-peas; and what is more curious, they were turning colour, indicating the time of ripeness, although placed in perfect darkness in the middle of a ball of moss, and the whole root and rootlets were as plump and fresh as if the plant was in full leaf. Now, I am almost sure that whole collections of Ixias, Oxalises, and all other greenhouse and frame bulbs could be grown in little balls of fresh moss kept moderately damp, without any pots at all, and that with one-half the trouble and care they require in pots and peat earth. You could place, or rather pack the balls on a shelf, as close together as possible, the moment they were potted in October, and after giving them one good watering, if they were safe from frost, you might go to Italy for the winter, and be quite at ease about your bulbs till next March. On your return, if the tops were interfering with each other, you would undo the packing, and distribute your bulbs according to your room or fancy, and if you did but water the moss once a week or so, the whole would bloom, ripen, and seed as well as if you had been tied down to their individual culture since last October. But my experiment is not carried out to the point I suggested, and I must repeat it, and I should be very glad indeed to hear how it turns out. Take any of your overstock plants, shake the soil from the roots, pack them (the roots) in a ball of moss, then plunge the ball in water, let it drain a little, and put it in a bladder or some waterproof covering, and see how long it will do without more water.

D. Beaton.

A FEW HARD-WOODED PLANTS.

I have introduced these here, to meet the case of enquiries lately made, and also because little attention has hitherto been given to them.

Boronia serrulata.—This species, as well as all its brother species and varieties, so far as we are aware, are natives of the vast continental island of New Holland. The Flora, and the climate of this vast region, are becoming every day better known. Thanks to the gold-diggings, and the fertility of the soil, the differences that obtain in the different colonies will soon be as well known as the distinguishing features of our own counties. As yet, we have not obtained that information, and what has been communicated, is too generally included in volumes beyond our reach. All accounts agree, that there is a considerable difference in climate between New South Wales, Australia, and such settlements as that along the Swan River. The climate and the fertility, even of each colony, are greatly influenced by *locality*—whether as being placed near the coast, on the rising grounds, or the almost boundless plains of the interior. This we are apt to forget, when we grow a collection of New Holland plants, and what is worse, when we want any definite information, such as might be obtained from the works of Messrs. Labillardiere and Brown, unfortunately we cannot have them at our elbows. The very low temperature which plants endure in that region, at times, for which we have well-vouched evidence, instead of being a safe guide for us to rest upon, has often proved a regular will-with-the-wisp to

lead us astray. Instances have been known to us, of well-read proprietors interfering with their gardener's mode of heating their plant-houses, clinching all with authorities as to the degree of cold endured by plants at New Holland, and the Cape of Good Hope. The result was a sickly, diseased, and decaying vegetation. Our climate is different almost from every other. Our moist atmosphere, which clothes our hill-sides and plains with almost unequalled verdure, keeps our New Holland plants growing, when the growth should be becoming consolidated and matured. It is no uncommon thing in those countries for the thermometer to rise above 90° in the shade; and yet, with a bright sun, owing to the dryness of the atmosphere, the heat is felt to be less oppressive than 75° or 80° would be with us, owing to the moisture in our atmosphere. Think of a *Boronia*, or any other plant, exposed for weeks and months to such a temperature, and such an atmosphere, and contrast its position, even in our best summers, in which lately we seem to have as much of the cloud and the haze as the sunshine—contrast the firm, hard, sound, matured wood, in the one case, with that which must be comparatively soft and unripened in the other. We must approach the high temperature and dry atmosphere of such countries in our summer, before we can trust their plants with such a cold as they will stand at home in *our* winters. With comparatively free-growing things we manage these matters rather *economically* by curtailing growth, by the confining of the roots, and the lessening the supply of moisture. But with such delicate things as the beautiful and delightfully-scented Boronia, we must be limited in our experiments in this direction. Knowing that its average winter temperature at home is not less than 50°, we shall act safest, in our dull-summer country, not to give it a too low temperature in winter. The horticulturist gave the correspondent who led to this article sound advice, when he advised removing it from a cold to a warm greenhouse. The sickly appearance must be owing to other causes than its comfortable quarters in winter. Placing it in your airiest and coldest house, even now, will hardly improve it, unless the treatment is altered. Is the soil free and open? Is the drainage all right? With these preliminaries we proceed more in detail as respects—

1stly, *Its propagation.*—The *time* for doing this may range from February to July, but the sooner the better, as the plants will be better established before winter. The obtaining the cuttings must so far regulate the *time*. From old plants, nice little bits, neither hard nor soft, may be obtained early, and which would not have been likely to bloom. Failing this, nice cuttings may be obtained from an early blooming plant, when, after blooming, it has been pruned back, and the young shoots are somewhat hard at their base, and may be slipped off at their base, close to the old stem, with what is technically termed a *heel*. Previously to this, *pots* should have been prepared as carefully as recommended for heaths; if a small pot inside a larger one, so much the better, filled three-parts with drainage, and the remaining fourth with equal portions of rough peat, fine peat, and sand—the sand uppermost, of course. A four-inch pot to hold the cuttings, inside a six-inch one, will answer admirably; and the tapering bell-glass could be fixed in the space between the two pots. As to *position* in spring, a place commanding a temperature of from 50° to 65° will be best. In summer, a cold frame or pit will answer. The cuttings must be shaded from bright sun there until rooting has commenced; but if during the summer the pots stand eighteen inches from the glass, and fifteen inches in spring, little shading will be required. As soon as the base of the cuttings begin to swell—technically, to *callus*—a little air should be given, by tilting the bell-glass in the evening, and replacing it before the sun strikes powerfully on the cuttings in the morning. Full exposure should be given them before potting-off.

2ndly. *Potting.*—Whenever potted, the pots should not be larger than three or four inches in diameter. If the season is advanced, three or four plants may stan in the latter sized pot all the first winter, and be repotted early in spring. The pots should be thoroughly clean, and if new ones, well dried, after being previously well soaked in water. The using new-burnt pots for particular plants, without previously soaking them, is just as workmanlike as a bricklayer cementing a wall of bricks without undergoing a similar soaking. *Drainage* is the next thing, and, perhaps, of all others, the most important for this plant; a want of water, and stagnant water, injure it almost irredeemably. From a fifth to a fourth of the pot must consist solely of drainage, with a layer of half-decayed moss, to prevent the possibility of the drainage being choked. Nor is this all. The soil used must be in a condition to continue the drainage; its general character should be roughness and openness, but yet in so small pieces as to pack firmly together. A thin covering on the surface should be fine to prevent the air entering too freely. According to the size of the plant and shift, the pieces of the compost may range from the size of the common pea to that of the Mazagan bean. The chief constituent should be well aired sandy peat, and half its quantity may consist of broken charcoal and broken pots, from which the dusty matter has been excluded. In spring, we have found the plants benefited by a slight dressing on the surface of three-year-old cow-dung, rubbed through a sieve, or a solution of two-year-old dung, in a weak state, used as watering—the plants bloomed finer in consequence; any other artificial stimulant used seemed to be too hot for the plants, and did more harm than good. Finally, on this point, the plants should always be *rather underpotted*, and for two reasons: first, to guard against stagnation of moisture; consolidate the wood before the dark days of autumn and, secondly, to enable the sunlight in our climate to and winter.

3rdly. *Training and Growth.*—As this species produces its charming bloom on the points of the shoots, a low compact bush is the best form in which it can be grown, and, in its young state, frequent stoppings will be necessary, and when in an old healthy plant, thinning at times will be necessary, so as to leave a requisite number of shoots, as much alike in strength as possible.

4thly. *Position and Temperature.*—Whenever young plants are potted they must be kept close for a time, and somewhat shaded, until fresh growth has taken place; at every potting this will have to be attended to, and, to a certain extent, it will always be desirable after pruning, when flowering is terminated; but this closeness and shading must not be carried to excess, particularly *then*, or the plant will become weakened, and stored with crude juices. The same rule applies to established plants. When done blooming, the first thing to be thought of is fresh growth, and, as soon as that has freely commenced, our next care is to get the growth healthy and ripen. In summer, therefore, the more sunlight the plants receive the better, and the more heat and air they endure then, the lower will be the temperature they will endure uninjured in winter. After growth is going on, a shady place for them in summer is the worst of all places. I have, however, never trusted them entirely out-of-doors, though, if the *pots* were secured from the sun's rays, the plants sufficiently watered, and no more, and at the same time defended from storms and heavy rains, the brightest sun in the end of summer and the beginning of autumn, would just be the thing for them. Failing that attention, we must keep them in a cold-pit, or in a very lightsome greenhouse, so as to secure all the sunlight possible, plenty of air, and if exposed, as in

a cold-pit, with the means of pulling a sash over them whenever necessary. Wherever they stand in summer, they should be *housed* by the middle, or at the farthest, the end of September; obtain a good position near the glass, with abundance of air so long as the outside temperature will enable you to do so. All these things attended to, November and December are the months in which they will stand the coolest temperature; but even then, it should not often be below 40°, and not for any long time below 45°. That temperature, or even a lower one for a short time, with air, will not hurt them so much as a higher one in a stagnant atmosphere. Hence one reason why, after the turn of the year, a higher temperature suits them, is that the heat applied keeps the air in motion. From January to February, the plants, receiving fresh air, will thrive well in a temperature ranging from 45° to 55°, with an allowance of 10° or 15° higher for sunshine. After that period, what will suit heaths, and other greenhouse plants, will suit them.

5thly. *Watering.*—This is a matter of great importance. All the means formerly mentioned as intimations that the plants want watering or not must be attended to. If dried at one time, and moisture stagnating at the roots at another, the same ruinous results will ensue. Soft water must be used. When exposed upon shelves, double pots are therefore useful both in summer and winter. But much, even then, will depend upon the judgment of him who wields the water can. From my own experience, I should judge the plant at best to be rather short lived. Attending to the above treatment, I have succeeded in pleasing myself; when, from various causes, any of these matters have been neglected, I have been mortified to find the plants very soon candidates for the rubbish-heap. A fine plant, therefore, always augurs not only *good*, but very *attentive* and *pains-taking* gardening.

Other plants alluded to by our correspondent, chiefly of the same genus, I cannot now dwell upon; but this is less to be regretted, as every one mentioned may be grown in a similar manner, and the only difference is that they will succeed with much less care.

R. Fish.

NEW STOVE PLANTS.

There are, in some of the London nurseries, several new stove plants. In this paper we purpose giving their names, and, where we know the plants, a short description of each; which description, with culture, &c., shall be more fully given as they become better known.

Achimenes.—In this fine tribe there are four new and distinct varieties, namely,

A. Bœckmannii hirsuta cœrulea.—With fine, large, blue flowers; very distinct. 3s. 6d.

A. corymbosa.—This is said to be very fine, with heads of flower in the corymbose style. 5s.

A. purpurea magnifica.—Large purple flowers; very fine and distinct. 2s. 6d.

A. Rendatleri.—Very fine. 3s. 6d.

Æschynanthus candidus.—Rather small flowers, of a good white colour, with the throat spotted with crimson; very pretty, and useful to grow in fanciful baskets. 3s. 6d.

Æ. pulchellus.—Very free flowering variety, with pure white flowers. 3s. 6d.

Anectochilus Lobbianus.—A charming addition to this charming family of plants, with leaves of the brightest green, finely veined with white. 63s.

Begonia Puseyii.—A most abundant flowerer, very handsome, with pendant trusses of pure white flowers. 7s. 6d.

Bartholina maculata, and B. marmorea.—Charming dwarf plants, with star-shaped bright pink flowers; the leaves of both are beautifully marked. 3s. 6d. each.

Brugmansia eximia.—A new fine species. 10s. 6d.

Brunsfelsia jamaceensis.—A great improvement upon the older species, with large, white, sweet-scented flowers, most abundantly produced.

Columnea aurantiaca.—Rich orange-coloured flowers; new, and very desirable.

Cyrtanthera magnifica.—Large trusses of salmon-pink flowers. A good plant for exhibitions, flowering the greater part of the summer. 3s. 6d.

Dracæna nobilis.—This, as its name imports, is a noble plant, with large leaves, thickly produced on the plant, and richly coloured with crimson. 21s.

Echites Harrisonii.—Flowers, yellow, striped with crimson, the bottom of each of a lively red; it is also very fragrant. Very rare.

Gesnera coruscans.—Glittering scarlet; fine. 5s.

G. Knopfallii superba.—Distinct, and very beautiful. 10s. 6d.

G. Leopoldiana.—New, and very beautiful. 21s.

G. zebrina compacta.—This is a new, very dwarf variety, not growing more than six inches high, and flowering profusely; very desirable. 10s. 6d.

Geissomeria aurantiaca.—Very distinct, with orange-coloured flowers, and splendid foliage. 10s. 6d.

Gloriosa Plantii.—This fine species was discovered by Mr. Plant, in South Africa; it is very distinct from *G. superba*, and more easily grown, flowering profusely. 21s.

Gloxinia argyrostigma splendens.—Fine handsome foliage, the veins having the appearance of crystal; a deep purple flower, with white throat. No collection can be perfect without this fine variety. 5s.

G. Leon Lequay.—Light blue, with a deep purple throat; good. 7s. 6d.

G. spectabilis.—Light purple, with large deep purple mouth, and richly shotted centre; fine shape and stout substance. A fine variety. 3s. 6d.

There are several other fine varieties imported from the Continent, but the above appear to us to be the best at present.

Ipomea palmata.—A new and beautiful Ipomea, with medium-sized lilac-blue flowers, and neat palmated foliage; a beautiful climber, well adapted either for the rafter or for training to a balloon-shaped trellis. 10s. 6d.

Ixora aurantiaca.—Orange-flowered Ixora, a new and splendid addition to this fine genus; a very free flowerer. 15s.

Klugia Zeylonica.—The Ceylon Klugia. This is a beautiful plant, with fine azure-blue flowers. 10s. 6d.

Maranta sanguinea.—Unlike the rest of this genus this has large clusters of fine coral-red flowers, with noble dark-coloured leaves; it is very handsome. 10s. 6d.

Nautylocalyx bracteatum.—This is a decidedly new, handsome plant. We saw it in flower for the first time at the Wellington Nursery, St. John's Wood, on the 2nd of this month; probably it has flowered nowhere else as yet in England. It belongs to that fine tribe the Gesner-worts. The plant was about a foot high; the foliage large, oval-shaped, and of a fine green. The flowers are produced from the axils of the leaves, and proceed out of a large pair of green bracts, each producing several flowers in succession; they are large, of a fleshy substance, rather turned back at the edges; the colour, a creamy white, with two brownish-buff stripes down the lower limb. Altogether it is an acquisition to the stove, and will be much sought after when better known. 31s. 6d.

Pandanus Javanicus variegatus.—Perhaps this is the finest variegated plant we have in our stoves; the leaves are from a foot to two feet long, beautifully and freely striped with white. Those who admire variegated plants should by all means procure this. 21s.

Passiflora alata superba.—A great improvement even upon that fine species *P. alata;* the form is better, and the colours more vivid. 5s.

P. amabilis.—Bright scarlet; very fine. 5s.

P. Comte Kisseloff.—5s.

P. Comte Nesselrode.—These two are said to be exceedingly beautiful, but they have not flowered yet in Great Britain.

P. racemosa elegans.—An improvement upon the species, with finer and more highly-coloured flowers. 10s. 6d.

Portlandia platantha.—This is a truly fine plant, often sent out as *P. grandiflora,* but is much superior to that fine plant, flowering more freely, and more dwarf in habit. 21s. T. Appleby.

(*To be continued.*)

CULTURE OF ROSES IN POTS FOR EXHIBITION.

(*Continued from page* 165.)

Mildew.—In the various pursuits to which mankind devote their time and talents, there are none that require such a large stock of patience, industry, and untiring perseverance as that of horticulture, in the varying climate of this country. More especially are the above qualities necessary to the cultivator of florists' flowers. He may procure the best plants; he may put up the necessary erections to grow them in; he may procure the proper soils without exercising much thought or attention; his purse, if well filled, may do this, but the after attention and care will still be in daily requisition. The proper degree of temperature, of watering, giving air, and destroying insects, must be daily bestowed, or he will miserably fail. Even when all these points have been carefully attended to, disease may attack the objects of his labour of love, and put to flight all hopes of success, unless remedies are applied instantly the disease appears, and there is no disease so fearfully destructive as that plague, the mildew, and no plant that suffers more than the rose from its ravages. In the open air, it is very rarely observed until the decline of the year. Then, when cold, damp weather prevails, this parasite may be seen making daily progress, especially in wet soils and low situations. Then, by its baneful influence, it destroys the energies and weakens the powers of the plants to perform the functions of life, prevents the late flowers expanding, and, what is of the greatest consequence, prevents the wood from attaining what is technically called ripeness, and so injures the plants for the following year.

Roses in pots are subject to mildew from similar causes, namely, a low, close, damp atmosphere in the house or pit, and the remedy is obvious. In such structures, where the atmosphere is in a great measure under the control of the manager, it is his own fault if the internal air is not rendered sweet and wholsome. Whenever the mildew appears, raise the heat of the house, give abundance of air on all favourable occasions, and be careful that there is no more water used than is absolutely necessary to keep the plants growing and healthy. The floor of the house should be kept dry and clean, and every decayed leaf removed. The soil on the surface in the pot should be frequently stirred, to prevent moss and lichens from growing, for these are not only unsightly, but positively injurious, by retaining moisture, and thus giving out a bad, unwholesome, and disagreeable air, or, more properly, miasma, which is offensive to the organ of smelling, and must be greatly injurious to the plants that are constantly exposed to its ill effects. If, notwithstanding all these remedial measures, the mildew still appears to spread, then procure some flower of sulphur, as it is called, and dust it over the leaves affected; the parts that are mildewed will retain it, and its pungent qualities will destroy it; and as soon as that is effected, let it, some fine dry morning, be washed off with the syringe.

Very lately we had occasion to visit an establishment not a hundred miles from London, and were shown a house full of forced roses upon which the mildew had made its appearance in great strength; and no wonder! The roots were standing upon a bed of wet sand—the walks were wet and slippery with mud—the house had very little air—and the smell arising from the wet and mud was exceedingly strong and offensive. No wonder the mildew flourished under such circumstances! and we are fully persuaded that the cause why it has prevailed so extensively lately, in some places, on *the vine,* arises from the same circumstances in a great degree; and until such circumstances are remedied it will prevail still more extensively.

Let the grower of roses in pots for exhibition, or for any other purposes, then, be careful to keep the air in his rose-house sweet, dry, and wholesome, or, he may depend upon it, the mildew will quickly make its appearance, and render nugatory all the care, expense, and trouble he may have put himself to.

There is another disease that sometimes makes its appearance upon the leaves of the rose, and very much injures and disfigures them. This disease, for want of a better name, we shall designate *gangrene.* A small spot appears somewhere near the centre of apparently a healthy leaf. It quickly spreads, becomes of a bright reddish yellow colour, and soon destroys the leaf. The cause of this is wrapped in mystery. No insect that we could ever discover is seen upon or within the leaf, neither was a drop of water near it. Whether any specks in the glass may cause it is also a matter of doubt, for we have observed it on leaves that the sun's beams never could possibly reach. If any one of our readers have been fortunate enough to detect the cause, we should be greatly obliged by the information. The cause being unknown, it is difficult to say what remedy to apply; the only feasible one we can suggest is to cut off the leaves affected the moment they are observed; for though we are confessedly ignorant whether it is infectious, and of a spreading character, yet we are sensible that by cutting off the affected leaves, and expelling them from the premises, we are, as much as lies in our power, preventing the disease from spreading.

T. Appleby.

(*To be continued.*)

KITCHEN-GARDEN WALKS.

If we were asked, if any one thing more than another is necessary to give a garden, or grounds, the appearance of good keeping, we should reply—Yes, the quality of the "walks," and their adjuncts "the edgings." Even the kitchen-garden, where the multiplicity of operations are continually going on, is much enhanced in beauty by being intersected with good sound walks; we use the word sound, because it is more important here that those main thoroughfares, for wheeled carriages as well as pedestrians, should be firm and hard, rather than only ornamental, which is more especially the case where traffic is confined, in a great measure, to the latter class.

Some months ago, Mr. Beaton detailed to us his mode of making walks for flower-garden or pleasure-ground purposes, which doubtless were good for such places, and still more so where a considerable declivity was to be ascended; but unless the material he used differs much from the same kind in other parts, they appeared to us to contain too much of soft matter to endure the wear of barrow-wheels, when continued from day to day, as is often the case in this department of industry rather than of repose. We, therefore, advise those of our friends

about forming new garden walks, not to be too sparing of hard stones, as, after all, they are the most lasting of road or walk-making materials. The grinding wheel makes less impression on a piece of lime-stone or flint than it would do on chalk, ashes, or soft gravel, however well they may be blended together. To make them as hard "and durable as flint," is certainly on a par with that argument which assured us that a wooden pavement was more lasting than one of Scotch granite for our streets. We, therefore, entreat our friends not to depend entirely on those materials, which only bind or consolidate others of this class into that state of firm smoothness capable of bearing a certain weight, only when that weight rests on a tolerable broad basis, as the human foot; widely differing from that is the pressure of the wheel of an ordinary barrow when loaded, and performing its evolutions on the same spot, hundreds, nay, thousands of times; it is then when the wear of the walks is felt, and of whatever material it be made, it is sure in time to tell upon it, but of course more so when such walks are formed of such soft materials as indents with the least weight upon them. Now, as it is scarcely possible to keep the walks in a kitchen-garden in that uniform good order which those of a lawn are usually seen in, yet they may, in a general way, be kept tolerably even and good, by having recourse to the minor walks on which to perform much of the wheeling and all dirty traffic. Another thing, is seldom or never to wheel on them in damp weather or after frosts; still, with all these allowances, kitchen-garden walks are necessarily more used than any other, and ought to be firm, hard, and substantial, which can only be made such by the plentiful use of hard stone of some kind or other.

The best walks we ever remember seeing were in a garden in the immediate neighbourhood of lead mines. We understood the foundation to be, as is usual in such cases, rough stones intermixed with those of a finer description, and finally a good coating of the fine hard crushed stone, called "cuttings," which is the stone which lead is found amongst, broken up by machinery into pieces in no case larger than a walnut, and mostly smaller. This crushed stone being angular, sooner becomes a united firm surface than the hard flinty pebbles found on the seashore and by the edge of some rivers, and which, in the southern counties, has received the somewhat ambiguous name of "sea-beach." This material, like a collection of boys' marbles, or hardened eggs, having no affinity for each other, never unite unless through the intervention of some other adhesive body, which is hard to obtain sufficiently plentiful and cheap to meet all the purposes of a kitchen-garden. We, therefore, advise our friends to have recourse to broken stones if they can be had. We have frequently seen road-stones broken unusually small by the inmates of a union workhouse, and sold at a trifle over that of ordinary stones; such metal is the very best that can be had for carriage-roads, kitchen-garden walks, and other thoroughfares, where ordinary sized road-stones would not be likely to get fixed in time without a coating of something else. We, therefore, beg our readers to turn their attention to the above quarter in their respective neighbourhood, and see if such materials are not to be had. The chippings of stone masons' is another useful article in the same way; in fact, anything in a broken way is serviceable if it be hard; and we have seen clinkers, the refuse of glass and iron furnaces, and other substances in that way, all used to advantage; some of the latter were, on the whole, better for a time than stone, presenting a more repulsive bed for weeds to grow on. But, as we have already said enough on this subject, we must leave for another week our remarks on the minor walks and edgings. J. Robson.

THE UPPER CHAMBER.

By the Authoress of "My Flowers."

I wish I could transport some of my readers into one of the rooms of a little cottage, standing on the brink of a canal, and show them all that it contains, for it would teach them many lessons; but as I cannot do so, I will endeavour to describe the scene, for it is one well worthy the attention of all, both high and low,—the inmates of the palace, as well as of the rural cottage.

In this little dwelling a lock-keeper has lived for forty years, actively and carefully employing himself in the duties of his calling. He was up early and late; no weather stopped his labours; and he was a man fully trusted by the company, because he always discharged his duty well. He was a hale, robust man too, and though advanced in years, was in no peril of death, as far as human eye could see.

James Saunders, however, had a Master whom he did *not* serve. He did the company's work well, but he left the work of God utterly undone. He was a drinking, jesting, ungodly man; full of everything belonging to this world, but dead to all that belonged to the world to come. He could hear the well-known sound of a barge, even when asleep in bed, and would spring up and rush out to see that all was right, but neither "the fire," "the whirlwind," nor the "still, small voice," could wake his sleeping soul. He never asked or cared whether things were safe *within;* as long as "the water" was all right, and he could get idle companions to drink and joke with, he was quite content.

Last summer, the Angel of the Lord met James Saunders. He went out of his house one morning in his usual health and spirits, and in five minutes was carried in again without power to move. Cut down like the grass, stricken like a deer, smitten by the Hand that no man can resist, James Saunders was placed in bed, from which he will rise no more.

When all hope of recovery was given up, it was necessary to place another lock-keeper in his cottage; and as poor Saunders was unable to be moved, his wife was obliged to make way for the new comers by settling herself in the little bedroom, and giving up the rest of the small tenement to the large family of the man placed in her husband's situation.

In this little, close room, with a south sun shining full upon it, lies the poor suffering lock-keeper, a pitiable sight. One side is powerless, and the hand and arm so heavy, that it is held up by a string and hook from the top of the bed, that it may not press upon his exhausted body, for the weight was like that of a large stone. The pain, restlessness, weakness, and distress of the body is great indeed; there is no ease, no comfort, and there is no "*light*" to cheer him on through the dark valley. He has all to learn, when he is broken down and distracted; and his tears and prayers are sadly mingled with the oaths and foolish talking of his former days. Death has settled himself close by his pillow, and terrifies the soul; but when pain and disease afflict the body, how can the spirit awake and give itself then to God? It is a fearful risk to run; let us be ready *before* the bridegroom comes.

Betty Saunders is a woman of weak and tottering frame, but of great spiritual attainments. It is wonderful to hear her speak; how much she knows, feels, and has felt, during her obscure but eventful pilgrimage with the man she chose in her days of darkness. She had much to bear from one who hated and laughed at religion; but now her turn is come to pay back good for evil, and the words she speaks to him by night and day are words of extraordinary power. Exhausted by months of weary watching, broken rest, scanty food, and great distress, poor Betty can scarcely do more than look at and feed her helpless husband. A second bed crowds the small room, on which she sometimes rests; but he is so restless and violent if she is not near him, that most of her time is spent in a chair by his bedside. The company give him a small weekly sum, the parish allows the wife a loaf and a shilling *now*, but for months they withheld it, and she was nearly starved; for continual fire, candle, and other requirements for a sick-bed, all but swallowed up the 3s. 6d. poor Saunders receives. As it is, their privations are great; but in Betty's case they are softened, sweetened, almost put away by the power and energy of her faith. Her eye kindles, and her lips pour forth streams of simple elo-

quence that flow from a heart acquainted with God; and good would it be for some of us, who are surrounded with blessings, to enter the "upper chamber," where so much is to be seen and learned.

Saunders lies crumpled-up in his uneasy bed, unable to move on his pillow. A small fire-place, which scarcely kept them warm in winter, now renders the room oppressive to all but the sick-man, and the few articles of furniture they possess are all crowded into the room, so that there is little space to move. Such is the dwelling-place of this aged pair, who appear in it as monuments of God's judgment and mercy. The one, who has defied his law through life, is now brought to desolation; his headlong race is run; the day of his mad folly has ended; and the night of sorrow and suffering set in. The other, amidst trial and trouble, says with a beaming eye—"Goodness and mercy have followed me all the days of my life." "Though he slay me, yet will I trust in Him.'"

We need to see the trials of the poor rightly to understand them, and to measure their patience under them. We need to see their trials, to measure aright our own blessings and enjoyments. We need to see their trials, to measure aright the grace that supports them, and to feel how and where it is that the believer gains strength according to his day. We must not be content with looking in at a cottage door; we may see nothing there to interest us; but we must go into the "upper chambers," where sickness dwells. We shall there see God's controversy with man; we shall see the ungodly tremble; the strong man brought low; the infidel confessing there is a God; the blasphemer silenced. We shall also see the triumph of faith; the truth and faithfulness of the promises; the "power of Christ's resurrection;" as well as the "fellowship of his sufferings;" and we shall be taught the most wholesome truth, that amid the changes and chances of our restless lives, "*but one thing is needful*," both to sweeten adversity, to hallow prosperity, and to establish the "hope which is as an anchor to the soul, both sure and steadfast," which "maketh not ashamed." Let us all seek *lessons of wisdom*, which are better than "much fine gold," and we shall find them plainly and powerfully set forth in the poor man's "upper chamber."

THE CHELTENHAM AND COUNTY OF GLOUCESTER EXHIBITION OF POULTRY.

This exhibition, of which much was expected, came off on Thursday the 3rd inst., and certainly the expectations which had been raised were not disappointed; for whether we regard the number of entries, the qualities of the fowls shown, or the interest taken in the exhibition, it may be said, especially for a first attempt, to have been eminently successful. This is not difficult to be accounted for; for these exhibitions, hitherto confined almost exclusively to the North of England, are extending, as the fancy for good poultry spreads itself, and will soon be held in many localities in which they have never yet been heard of, or will, perhaps, be added to the ordinary Agricultural Shows, for which addition the Royal Agricultural Society has extensively set the example. By means such as these, we hope soon to see the breeds of superior fowl diffused through our country farm-yards, and as great an improvement effected in this branch of rural and domestic economy as has been attained of late years in the breeds of other useful animals.

The show of which we have now to give an account, was held at the Royal Old Wells, at Cheltenham. The day was all that could be desired. A handsome and very capacious tent was placed in the centre promenade, and here the most valuable specimens were arranged upon a table extending along the whole length of the tent. The rest of the fowls shown, together with the pigeons, were exhibited in the Music-room, and this arrangement was favourable to those who desired a good view of the different specimens, for it caused a division of the company, and prevented crowding. Too much praise cannot be allotted to the Messrs. Jessop, with whom the whole management appeared to rest. It cannot be expected that all the arrangements for a first exhibition, so extensive as this, should be perfect, but without experience, and with very little assistance, the only wonder is, that these gentlemen were enabled to make their arrangements so perfect as they were.

It will probably be expected that we should give our readers such particulars of the different classes as our space will permit. The names of the principal exhibitors will appear by the subjoined list of the prizes awarded by the judges, Mr. Bond, of Middleton Lodge, Leeds, and Mr. Bissell, of Birmingham. To these gentlemen, the managers of the show, the exhibitors, and the public, are equally indebted, for undertaking an office which is neither easy nor pleasant, and thereby preventing the necessity of resorting to the very objectionable practice of appointing dealers to be the judges to-day of the articles which they may have yesterday supplied.

Of *Cochin China fowls*, which in this, as in most of our recent exhibitions, attracted most attention, and deservedly so, there was a collection equalled by few, and surpassed by none of our previous shows. This fine breed of poultry, equally useful and ornamental, is now becoming more diffused amongst amateurs, although the great price which good specimens still command, shows that they were yet by no means common. They were here divided into several classes. The first and principal class (buffs and cinnamons), comprised some of the best birds ever exhibited. The premium prize, a Gloucestershire cup, for the best pen of birds in the exhibition, of any breed or variety, and the first prize in this class, were awarded, most deservedly, to Mr. Sturgeon, of Grays, in Essex, whose birds more than sustained the reputation they had already earned at Birmingham, and elsewhere; indeed, it is not too much now to say, that there is no breed of Cochins in England to equal them. The second prize was won by Mr. Andrews, of Dorchester, whose *hens* were equal to any in the exhibition. In the *dark class*, the hens shown by Mr. Punchard, were undoubtedly the best, but the cock being buff, the judges felt obliged, reluctantly, to disqualify the pen. The *white Cochins* were very good, but only four pens of them were shown. The first prize being awarded to Mr. Hodgkinson, and the second to Mrs. Herbert. For the best cocks, the first prize was awarded to Mr. Holcomb, of Campden, for a very superior buff bird. The chickens of this breed, were, considering the time of the year, wonderfully forward; some of them, bred by Mr. Lawton, of York, weighing upwards of 5 lbs. each. The judges, however, gave the prizes to more uniform and better coloured pens, the successful exhibitors being Mr. Peters, and Miss Wilcox. We cannot dismiss this class without adding, that it was, as a whole, most excellent.

The *Malays* were few, but good, and we hope this fine variety of fowls, which has of late been scarce at our exhibitions, will be still cultivated among amateurs. The specimens exhibited by Mr. Leighton, and in extra stock, by Mr. Sayers, were first-rate, and well deserved the prizes awarded to them.

The *Spanish fowls*, as a class, were not so good as we have seen at other shows; there were, however, exceptions, and those shown by Capt. Hornby, R.N., to whom the first prize was awarded, were quite first-class specimens, and would have commanded a prize at any exhibition. The same gentleman carried off the first prize in the *Dorking class*, which he also well deserved, for all his kinds were good of their sorts, and were shown in blooming condition. Mr. Towneley Parker, also showed some good Dorkings; he obtained the second prize, and the first prize also for chickens of the same variety.

Of *Game fowls* there were but few, but they were good, and an extra prize was awarded to Mr. Armitage, for some very beautiful Indian game fowls.

The *Hamburgh fowl* were very poor, and in some of the classes the judges withheld the first prizes. The amateurs in this locality must apply to their Northern brethren for assistance in improving their breeds of these pretty varieties of poultry, which are cultivated to perfection, especially, we are happy to say, by cottagers and artizans, in Yorkshire and Lancashire.

The *black Polands*, which are becoming favourites, were good, but not numerous, and there was a pair of good white ones.

The pretty, pert, and sprightly *Sebright Bantams*, gold and silver, were represented by some good specimens; but of the other varieties of these diminutive fowl there were but few, and those but middling.

The *Ducks* and *Turkies* were only poor specimens, but the *Geese* shown by Mr. Towneley Parker, an enthusiastic amateur, were particularly good.

Prizes were offered for the different varieties of *Pigeons*, and very good kinds were shown in some of the classes. The extra stock also, and the stock exhibited, but not for competition, by the Messrs. Jessop, comprised some good birds of different varieties. Altogether, as we have said, this exhibition was a most successful one, and it was patronised, as it deserved, by a numerous and most respectable company.

To say that there were some defects in the arrangements made, is only to point out what might fairly be expected in a first attempt, and we notice these things as a warning to managers of other intended exhibitions, and not by way of reproach to those to whom all are much indebted for that now under our notice. There was barely time given to the judges sufficient to enable them to make their rounds satisfactorily, specimens being received up to two o'clock on the Wednesday, and little time being, therefore, left to arrange and classify them. But the most serious defect was the want of a catalogue—a want which prevented the public availing themselves so extensively as they would otherwise no doubt have done, of the opportunity afforded to them of purchasing stock, because they had no means of judging of the relative qualities and prices of the specimens submitted to their notice.

But these, and some minor points will, no doubt, meet with attention on future occasions. Meantime, we congratulate the projectors and managers of this exhibition on the success which has attended their first show, and we have no doubt, that—profiting by the experience they have gained, and the hints which we (and, we dare say, others) have afforded in a spirit the most friendly—they will remedy the defects pointed out, and make this in future one of our best and most attractive of exhibitions.

We append the prize list.

CHINA FOWLS.

Cock and Two Hens; cinnamon or buff, feather-legged.—(Pen 208) *Sturgeon*, Grays, Essex (finest of either colour); prize, the Gloucestershire Silver Cup, value £5. (209) *Sturgeon;* prize, the Cheltenham Cup, value £3. (205) *G. J. Andrews*, South Street, Dorchester; second prize. (214) *J. Cattell*, Moseley, Birmingham; third prize.

Cock and Two Hens; colour, dark, feather-legged.—(238) *J. Punchard*, Blunt's Hall, Haverhill, Suffolk; the best, but disqualified because not dark. (236) *T. Smith*, Cheapside, Birmingham; second prize. (234) *E. Farmer*, Greet, Sparkbrook, near Birmingham; third prize.

Cock and Two Hens; white.—The birds taking prizes in this class were all bred by *Mrs. Herbert*, Powick, Worcestershire. (245) *G. Hodgkinson*, Moseley Wake Green, Worcestershire; first prize. *Mrs. Herbert;* second prize. *G. C. Adkins*, Edgbaston, Birmingham; third prize.

Cock and Two Hens; yellow or white legs, not feathered.—(253) *Hon. and Rev. W. C. Talbot*, Ombersley, Stourport; third prize; the only one given.

Finest Cock of any colour; feather-legged.—(263) *W. H. Holcombe*, Campden, Gloucestershire.

Finest Cock, White or Yellow; leg not feathered.—(276) *Hon. and Rev. W. C. Talbot.*

COCHIN CHINA CHICKENS.

Six Chickens of 1852.—(300) *G. C. Peters*, Moseley, Birmingham; hatched March 12; first prize. *Miss Ann Wilcox*, Nailsea Court, near Bristol; eleven weeks old; second prize. *G. Hodgkinson*, Moseley Wake Green, Worcestershire; hatched March and April; third prize.

MALAY FOWLS.

Cock and Two Hens.—(322) *J. Oldham*, Nether Whitacre, Warwickshire; second prize. No first prize awarded.

Cock and One Hen.—(321) *J. Leighton*, Cheltenham.

DORKING FOWLS.

Cock and Two Hens; speckled or grey.—(326) *Hon. Capt. Hornby, R.N.*, Knowsley Cottage, Prescot; first prize. (334) *T. T. Parker*, Sutton Grange, St. Helens, Lancashire; second prize. (329) *Hon. and Rev. W. C. Talbot;* third prize.

Cock and Two Hens; white.—*J. Jennens*, Moseley, Birmingham; first prize. (343) *J. Oldham;* second prize. No first prize awarded.

DORKING CHICKENS.

Pen of Six, Hatched in 1852; speckled or grey.—(347) *T. T. Parker;* hatched February 2; first prize. No competition in white chickens.

SPANISH.

Cock and Two Hens; black.—(352) *Hon. Capt. Hornby. R.N.;* first prize. (360) *E. Simons*, Birmingham; second prize. (349) *R. Cox*, Highfield, Edgbaston, Birmingham; third prize.

Cock and Two Hens; white.—(357) *J. Taylor*, Cresey House, Shepherd's Bush, London; second prize. No first prize awarded.

GAME.

Cock and Two Hens.—(371) *E. Glover*, Alton, near Solihull; first prize. (373) *A. Armitage*, Moraston, near Ross; extra first prize. (370) *T. Smith*, Cheapside, Birmingham; second prize. *W. P. Hurlstone*, King's Head, Cheltenham; third prize.

HAMBURGH.

Golden-spangled. Cock and Two Hens.—(389) *W. V. Toney*, Handsworth, Birmingham; first prize. (384) *E. Archer*, Great Malvern, Herefordshire; second prize. (385) *J. Walker*, Malvern Place, Cheltenham; extra second prize. (391) *W. Welsh*, Chapel Place, Cheltenham; third prize.

Cock and One Hen.—*J. Lloyd*, Angleston, Leicestershire; second prize.

Silver-pencilled. Cock and Two Hens.—(397) *G. C. Adkins*, Edgbaston, Birmingham; third prize. (400) *D. Stratford*, Malvern Place, Cheltenham; extra third prize.

Cock and One Hen.—(404) *R. Cox;* second prize.

Silver-spangled. Cock and Two Hens.—(409) *H. Herbert*, Powick, Warwickshire; second prize. (407) *J. Jennens*, Moseley, Birmingham; third prize. (410) *H. Wiggin*, Monument House, Edgbaston, Birmingham; extra third prize.

Cock and One Hen.—(415) *J. Harlow*, Moseley, Birmingham; first prize. (413) *W. G. Vivian*, Singleton, Swansea; second prize.

POLAND.

Black with White Crest. Cock and Two Hens.—(419) *E. Hewett*, Eden Cottage, Sparkbrook, near Birmingham; first prize. (420) *G. C. Adkins;* second prize.

Golden. Cock and One Hen.—(428) *W. G. Vivian;* second prize.

White. Cock and One Hen.—(430) *W. G. Vivian;* first prize.

CUCKOO FOWL.

Cock and Two Hens.—(431) *H. Herbert;* first prize.

RUMPLESS FOWL.

Cock and Two Hens.—(433) *Mrs. Buckle*, Uckington, near Cheltenham; first prize.

SILKY OR NEGRO FOWL.

(435 and 437) *J. Harlow;* first prizes.

BANTAMS.

Golden-laced. Cock and Two Hens.—(446) *Dr. Comyn*, Berkley Place, Cheltenham; first prize. (445) *Hon. Capt. Hornby, R.N.;* second prize.

Silver-laced. Cock and Two Hens.—(454) *E. Hewitt;* first prize. (452) *T. Baskett*, Cheltenham; second prize.

White. Cock and Two Hens.—(461) *W. G. Vivian;* first prize.

DOMESTIC GEESE.

Gander and Goose.—(470) *T. T. Parker;* first prize.

DUCKS.

Aylesbury: Drake and Duck.—(483) *Mrs. L. C. Stow*, Bredon, near Tewksbury; 1st prize. (482) *Miss G. M. Howard*, Milborne; 2nd prize. (481) *W. E. Lawrence*, The Greenway, Cheltenham; 3rd prize.

Rouen: Drake and Duck.—(489) *W. A. Maule*, Stapleton, near Bristol; 2nd prize.

Best Drake and Duck of any other Variety.—(493) *Miss Griffith*, Marle Hill; 1st prize. (493) *H. King*, Park Place, Cheltenham; 2nd prize. (492) *R. L. Amot*, Alston Lawn, Cheltenham; 3rd prize.

Muscovy: Drake and Duck.—(501) *N. H. Dyer*, Bredon Manor House, near Tewksbury; 1st prize.

TURKEYS.

Cock and One Hen; *Mrs. S. R. Herbert*, Powick; second prize. *Mr. W. A. Maule*, Bristol; third prize.

GUINEA FOWL.

Cock and One Hen; *Capt. Levett*, Hucclecote; first prize. *John Smith*, Sevenhampton; second prize.

PIGEONS.

Carriers; pair, first prize, *William Baker*, Cheltenham. *Antwerps;* first prize, *G. C. Adkins. Barbs;* first prize, *G. C. Adkins. Pouters or Croppers;* first prize, *G. C. Adkins. Runts;* first prize, *G. C. Adkins. Fantails*, white; first prize, *A. Smith*, Charlton Kings. *Fantails*, black; first prize, *T. J. Cottle*, Cheltenham. *Jacobins;* first prize, *A. Smith. Turbits;* first prize, *G. C. Adkins. Nuns;* first prize, *A. Smith. Trumpeters;* first prize, *T. J. Cottle*, Cheltenham. *Almond Tumblers; T. J. Cottle.*

EXTRA PRIZES.

Chitteegongs.—*A. C. Sayers*, Rambridge, near Andover, Suffolk.

Andalusian Fowls.—*John Taylor*, Cresey House, Shepherd's Bush, London.

Pair of White Pea Fowl.—*John Smith*, Sevenhampton.

Messrs. Jessop Brothers, the secretaries, exhibited birds in every class, but not for competition, the rules excluding dealers.

PROTECTION OR NO-PROTECTION.

"That is the question."

You inquire of your readers what effects the frosty weather in spring had on vegetation, and Mr. Errington, rejoicing in his success, exultingly demands, "What say the no-protectionists now?" I cannot settle that disputed question, but I am a regular protector, and yet for these last four years I have had little wall-fruit. Up to the 20th of last month I thought all was going on well, but on the previous evening the frost was so sharp that my apricots, protected by three thicknesses of herring netting, and some by spruce-fir branches, having poles to keep them a little distance from the trees, were completely blackened, and have nearly all dropped; nor am I the only one that has suffered. A friend of mine (I may as well name him, as I believe he is not unknown to you, Mr. Wighton, of Cossey) writes me on that fatal night his all perished; but not despairing, he says we

must begin again. Pears, though covered likewise, are nearly all gone, and my plums on north walls, which are now beautiful in bloom, have perished in embryo; cherries, I fear, are no better. It is my opinion that locality has far more to do with success than anything we can do, either in retarding or protecting. The gardens here are situated at a point where two vallies meet, one from the east, the other north-east; the latter full of springs and a small stream; consequently the air is always charged with vapour, which the winds we have lately had make very destructive. Last year, it was the wet that did all the injury. The only peaches I had were on *unprotected* trees. The season before, in March, we had a deep snow and a severe frost, particularly one night, and in the morning the rime hung on forest trees resembling what it did in Murphy's January. Of course everything here perished; even the apple-tree flower-buds, by applying the finger and thumb to them, could be made to spin off like a marble; yet not two miles from here, on the ridge that divides the two vallies, a farmer had a splendid crop of apricots and gooseberries; so had every one that possessed them in the little town of Swaffham. None of them are *protectors*. From the 17th to the 20th of April the preceding year, the frost was so penetrating that it destroyed the very trees themselves. I had planted the month previous, against a north wall, some fine cherry-trees; the previous year's wood was all destroyed; some old trees suffered so much that they never got over it; my apple-tree blossom was all destroyed, while all around here, in May, I never saw the orchards so gay. The only good effect I have experienced from it was on some large fig-trees, from which I had removed the covering only two or three days previous; all the previous year's wood was killed, and it so injured the constitution of the trees, that the last two years I have had excellent crops, and the present show equally good signs; they are an excellent substitute for peaches in September. After all this, who will be so confident in their practice, or presume all are laggards that cannot cope with them?—J. Murdoch, *Clay Hall, Swaffham.*

PRACTICAL OBSERVATIONS ON THE MANAGEMENT OF BEES.

By Henry Wenman Newman, Esq.

(*Continued from page* 90.)

HEAT AND COLD.

Heat and cold are both to be guarded against by bee-keepers. In severe cold the entrances to the hives should be closed entirely, and if the hives be good ones, with their coverings, this will generally be sufficient. That great observer, Virgil, who lived in a warmer climate than Britain, observes:—

> "Ipsa autem, seu corticibus tibi suta cavatis,
> Seu lento fuerint alvearia vimine texta,
> Angustos habeant aditus; nam frigore mella
> Cogit hyems, *eademque calor* liquifacta remittit.
> Utraque vis apibus pariter metuenda."

(Whether your bee-hives are made of hollow cork sewn together, or of bending twigs interwoven, let them have narrow entrances; for winter, with its cold, coagulates the honey, and heat, on the other hand, liquifies and wastes it. The effect of both these is dangerous to bees.)

The advocates for ventilation will do well, in severe weather, to have no chinks beneath their hives; for a draught of air, when the thermometer gets as low as from 5° to 10°, will candy the honey. So, on the other hand, although Virgil, in an Italian climate, recommends the shade of a tree for hives, this is only wanted in England in such summers as 1846; then, a temporary shade or wet cloths should be applied to the hives. In June and July, 1846, I met in my travels with a great many cottagers who had lost stocks by the melting of the combs; the greatest part of the losses occurring where stone floors instead of wooden floors were used.

A bee-house facing the south-east is certainly beneficial in this respect only, as the great heat of the meridian sun and afternoon are avoided. These hot summers, in England, are few and far between, and the bee-keeper is consequently not always prepared to meet them. Generally speaking, there is not sufficient sun; for sun, after all, is the life and soul of a hive bee, and without it his life would be of little use.

From the number of bees in Russia, there is no doubt that they can stand the most severe cold. A few years ago, 20 lbs. to 30 lbs. weight of honey were cut out of a piece of timber at Gloucester, which came from Memel; the combs were entire. Many persons went to see it as a great curiosity, it having been mentioned in the newspaper.

Certain it is bees always thrive better after a severe winter than after a mild one, and during such severe seasons they consume much less honey.

(*To be continued.*)

TO CORRESPONDENTS.

Sewage.—"*An Old Subscriber*," who manages a public establishment of 700 or 800 persons, wishes to know, if the sewage of the establishment equal daily to about 7000 gallons, can be profitably filtered through peat charcoal? We are of opinion that such a plan would not answer in practice. The peat charcoal would be required in too large quantities, and is expensive, as it must be used as a deodorizer in considerable proportions. If, however, "An Old Subscriber" would use the sewage in the irrigation of his land, the good effect would be certain. If he can pass it over his grass lands, he will find the grass the best, the most profitable, and the most certain of all deodorizers. He will soon discover that, as the sewage trickles over the grass, it gradually becomes more limpid and colourless, till at last its colour, taste, and smell, entirely disappear. And if our correspondent once saw the luxuriance of the grass produced by sewage irrigation, he would not hesitate to adopt so certain and so profitable a means of getting rid of a nuisance, and, at the same time, raising annually three heavy crops of grass. Peat charcoal has been tried, and found too expensive a deodorizer by the Croydon Board of Health. 7000 gallons of sewage daily is far too valuable a spring of liquid manure to be suffered to escape into the adjoining water. Peat charcoal is most usefully mixed with rich concentrated manure, such as nightsoil.

Bees—Early Swarm, their Enemies, &c.—*R. W. Newman, Esq.*, writes to us as follows: "I find a neighbour of mine had a swarm go off on the 8th of May. It was taken about half a mile from the stock by a stranger. 'The Country Curate' had also a swarm, on the 7th of May in Herefordshire. I regret to say that one of my old stocks to-day shows symptoms of poverty, having found several grubs about a-week old thrown out. I have not seen the bees pressed so hard since the year 1843, when I lost two stocks from starvation, one of which had swarmed in that month (May), when we had twenty-five wet days, more or less. The late rains and cold nights have been most unfavourable. I have adopted Mr. Payne's plan, and given my bees some barley-sugar—a very good and clean way of feeding, as they do not get bedaubed as they do with honey or sugared ale. I put in a few flat cakes of the barley sugar. Your correspondent, 'Verax,' mentions *Earwigs* amongst the enemies of bees. I beg to remind him, that no bushes or shrubs ought to be suffered to touch the hives; and that the hackles ought to be taken off and examined every three months at least. *Mice* are more apt to do mischief than earwigs. It is surprising the bees did not desert 'Verax's' hive. I never found *Hornets* annoy my bees, although I was surrounded by them when I lived in the Vale of Gloucestershire. I frequently saw the hornets attack the wasps and kill them. Amongst the traps to kill bees, greenhouses are bad, as, independently of the number of bees that perish, I find that most of the nurserymen keep a piece of lath on purpose to kill the bees in greenhouses, on account of the injury done to the flowers. A writer in 'The Zoologist' has mentioned the poor *Hedgehog* as an enemy to bees, but how is he to get at them? He seldom appears in broad daylight, and is a wretched climber. I found one in a well-cistern on my premises, not above *eight inches deep*, and he made several attempts to get out and always failed. I released him, and placed him on my lawn, and after remaining coiled about ten minutes, he went off at his usual slow pace. On Saturday, the 29th of May, after a very wet morning, about four o'clock, I found a swarm of bees in a clump of currant-trees; the bees were drenched with rain, and quite quiet, about twenty yards from the parent hive. Let this warn young bee-keepers to search their bushes, shrubs, and trees every hour, all round within fifty yards, from eleven o'clock until five. My last swarm came out with a blink of sunshine of ten minutes. If a watcher turns his back only for five minutes, he may not see them come out. The bustle of swarming or settling only lasts from three minutes to five minutes at most. I have killed fifty *queen wasps* during the months of April and May."

Berberis fascicularis (*J. G.*).—This is an evergreen which every nurseryman in the three kingdoms can show you, but *Berberis aquifolia* is the one intended by Mr. Beaton. The *Elford Rhubarb*, in our opinion, is still the best for coming in earliest without forcing, but we cannot tell by how many other names it may be known in the country. You can always tell it in a tart, however, from the juice coming near to Port wine colour. There is only one kind of hand-mowing machine, and it requires two men with two hands each, to work it; or a man and a stout lad; it it better than a scythe, but not so convenient, as it will only work in dry weather.

Himalayah Rhododendron Seedlings.—*Q* asks, "What is the proper treatment for these, sown in 1850, and at present in pots, in a cold frame?"—Seedling rhododendrons of that age, and from that mountain range, require treatment differing for different species as much as do orchids and calceolarias. If they are of the *arborea* kinds, they would come on faster in a stove. If they are of the thick, broad-leaved sorts, as *lepidatum* and *campanulatum*, a close cold pit, with a high summer temperature during the day, and quite cool at night, would suit them well; but if they are of the very small-leaved kinds, a very cool place, and away from the sun, is the proper place for their growth.

Verbena Venosa (*Verax*).—Transplant the March sown seedlings out of the pots at once, and so leave them to the end of next March, but throw a slight dry covering over them in winter. They are to be annually replanted at the end of March, and pieces of the trailing underground shoots, which look like roots, grow from every joint, if they are only stuck in the bed, so that their propagation is as easy as that of Spear-grass. If we chop what are usually called *the roots* of Spear-grass, or of this verbena, with a spade, the smallest piece will grow, if it has a joint, and is put into the ground.

Cockroaches (*E. S. G.*).—Like wasps and hornets, cockroaches have had a full share of the attention of *receipt makers*. We have seen, or known every receipt fail except the one "to catch and kill," and there is no other remedy for getting rid of them. The best traps for them are glass jugs, wide below, and narrow at the mouth or neck; out of this they cannot climb, and they will enter them, if properly placed, without a bait; otherwise sugar and water, meal-dust, or oatmeal will entice them. A stone or the ends of a couple of the flooring-boards at each end of the fender, should be removed the last thing at night; the glass jugs should then be fixed in their place, and the spaces between them to be filled up with sand, so that the mouths of the jugs are level with the surface. They are to be emptied every morning in scalding water. We have caught them by putting the glass within the fender and packing paper between them, but it takes a long time to get rid of them so.

Clematis Sieboldii (*E. S. G.*).—We have seen it go off by the stem, rotting at, or a little below, the surface of the ground, but recovered again by a fresh stem, and a much stronger one, from the roots. We hope yours may do the same; probably some grub or insect had barked it.

Bees (*S. Devon*).—The dead bees which you mention are, most probably, imperfectly formed young ones, and, on that account, turned out of the hives. Some may have died from the cold winds and rain. You will, in all probability, have had a swarm before this reaches you. Supply a glass or two to your "Neighbour's Cottage Hive;" in about 21 days from the time of putting the bees into it, remembering to put a piece of guide-comb into each glass.

The Frosted-silver Plant (*M. B.*).—This, the *Cineraria maritima*, you must keep trained down all the season, round the scarlet geraniums; and, if it gets too thick or lumpy in any part of the circle, you can thin out the branches, stop them, or indeed do anything to them. It is a plant you cannot possibly hurt by the hardest treatment. The sooner you make cuttings of *Lady Plymouth* geranium the better, but March or April is the right time for them. If it is in flower do not touch it, as such cuttings never make good plants.

Climbers (*E. J. P.*).—The very best "creepers," or rather climbers, for the "north side of a house, in a windy situation," are the evergreen climbing *Roses;* the next best are the *Sweet-scented Clematis* and *Clematis montana;* and all of them will cover large spaces in a short time, if the soil is a good rich loam on a dry or well-drained bottom.

Exporting Rhubarb (*F. W. T.*).—Any time from the end of September to the end of January will do to send rhubarb-roots to Havannah, and they may be sent in a strong case like so many potatoes, without any packing stuff. But how they will answer in Havannah we cannot say; perhaps some of our correspondents have so tried them, and can let us know. Keeping *green peas bottled for winter use* has been treated of in former volumes, but, for your benefit, we open the question again, and would be glad to hear again from our friends on the subject.

Sloping Bank (*H. C.*).—There is no definite rule on the subject; neither is it "a matter of taste," in one case out of five hundred, but only a matter of necessity. If you are limited in space, the slope must necessarily be steep; if not, the easier the slope the better. There is no rule whatever respecting gradual slopes in flower-gardens. Your best plan, and by far the cheapest, would be to have a flight of steps of wood, painted in imitation of stone, to get from terrace A to B and C at once; but better and cheaper still, to have the rises of the steps wooden, two inches thick, and seven inches deep, and the treads of the steps in concrete.

Chrysanthemum Culture (*G. T. C.*).—You ask how often may a chrysanthemum be stopped? This depends upon the time the first stopping takes place. If as early as March, it may be stopped again in May, and again in July. Again, you ask what is the latest time you may make the last stopping? Certainly not later than the middle of July. The final potting should be given just as the buds appear; this is some time after the stopping should have ceased.

Bulb (*Forest Hill*).—The flower you sent, as far as we could judge in the faded state it reached us, is a flower of *Ismene calathinum*, a bulb easy enough to manage. Pot in spring, and place it, if possible, in gentle heat; a bark bed is best. Water as the plants grow; and when the leaves turn yellow, then leave off watering, and give rest. In fact, treat it exactly as you would an amaryllis, and it will flower well. It is not difficult to cultivate.

Deodar, with Broken Leader (*J. Hayward*).—In order to remedy the misfortune that has happened to your *Cedrus deodara*, of losing its leading shoot, procure a moderately stout stick, tie the lower part of it to the upper part of the stem of the Deodar, and tie up to it the highest side-shoot that is uninjured. The stick should be long enough to enable you to tie up the side-shoot its full length. It will soon form a new leader, and in a couple of years the stick may be removed. Watch the ties, and if they appear to strangle the stem, cut them open, and tie afresh.

Wild Anemones.—*T. D.* would be glad to know where he can obtain plants of our British Anemones. For *a late crop of Peas* sow the *Prince Albert*.

Nectarine Shoots Leafless (*Eugenia*).—When this occurs either to the peach or nectarine, and only a few leaves are left at the end of the shoot, it arises usually from the occurrence of the late spring frosts. Ripening the young wood, with retarding and shelter in spring, are the means of prevention.

Poultry (*A Subscriber from the First*).—If the case were in our own poultry-yard, we should shut up the rooster until the wounds he has occasioned in the hens' sides were healed. Then, if the nails were kept cut, the wounding would probably not recur.

Vine Leaves (*Oswestry*).—Some are eaten by the weevil mentioned by us at p. 170. Others of the leaves are mildewed, or have the red spider, we cannot tell which from the dried specimens received. If you find no insects, numerous and minute, where the whiteness appears, you may be certain that it is mildew, and treat it with sulphur, as directed in back numbers.

Strawberry Runners (*H., Taunton*),—Peg down the very first leaflets; the end of the runner will continue to extend, but stop it as soon as the first leaflets shew symptoms of rooting.

Crystallizing Fruit.—*M. M.* would be obliged for a receipt whereby she can crystallize sugar over currants, sections of oranges, &c. Seedlings of *Marvel of Peru*, raised in a hotbed in March, will flower during July following in the open border.

Bees.—"A Grateful Subscriber" is informed by "A Country Vicar," "that to manage bees on his plan, with complete success, a little foresight is requisite to insure the presence of a youthful queen: which may be obtained either by securing one to such first swarms as are intended to be used for this purpose the following year, viz:—by destroying their queen, and returning them, when they will soon swarm out again with a young queen; or in default of this, having fixed upon the hive to be operated upon, let it swarm first as usual. Let her majesty be killed, and the swarm returned, and proceed with the plan proposed. Then, not only will the promised harvest be gathered in, but a splendid stock will remain for breeding or other purposes next year. If the queens are old in the two hives now working, "A Grateful Subscriber" must exert his ingenuity to catch them, and kill them as soon as possible, or the result will probably be as he anticipates."

Names of Plants (*Quidam*).—*Statice mucronata* and *Cytisus racemosus*. (*M. R.*).—The purplish red flower is *Cynoglossum officinale*. The other is allied to *Phlomis*, but we do not recognise it. (*A Subscriber*).—The bronze calceolaria we do not know; the yellow is *Calceolaria amplexicaulis; Geranium graveolens; Alyssum saxatile; Oxalis caprina* (?); *Mesembryanthemum multiflorum rubrum;* the variegated-leaved flower is *Alyssum variegatum*. (*Rev. R. M. Evans*).—*Lithospermum purpureo-cæruleum* is common in most nurseries. Your plant is *Collomia Cavanillesii*, but has been known by several other names.

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Advertisements.

WEEKLY CALENDAR.

M D	W D	JUNE 24—30, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
24	TH	MIDS. DAY. NAT. JN. BAP.	30.267 — 30.242	73—45	W.	—	45 a. 3	19 a. 8	0 4	☽	2 6	176
25	F	Great Knapweed flowers.	30.260 — 30.246	77—47	W.	—	46	19	0 27	8	2 19	177
26	S	Common Mallow flowers.	30.267 — 30.200	85—46	S.	—	46	19	0 48	9	2 31	178
27	SUN	3 SUNDAY AFTER TRINITY.	30.169 — 30.125	91—52	S.	—	47	19	1 8	10	2 44	179
28	M	QUEEN VICTORIA'S COR. 1838.	30.147 — 30.137	84—51	E.	—	47	19	1 33	11	2 56	180
29	TU	ST. PETER.	30.148 — 30.125	82—50	E.	—	48	19	2 1	12	3 8	181
30	W	Sweezewort flowers.	30.124 — 30.061	82—55	E.	—	48	18	2 37	13	3 20	182

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 72.1° and 50.1° respectively. The greatest heat, 93°, occurred on the 27th in 1825; and the lowest cold, 37° on the 25th in 1835. During the period 102 days were fine, and on 73 rain fell.

MANY years are now past since we had an opportunity to be a pilgrim around Petworth, and in the course of our wanderings there we came, one summer's evening, upon a small rude church, from the grave-yard of which we looked down upon and far beyond Petworth Park, whilst all nearer the eye was so beautiful and so picturesque, and the cottagers were so quiet and civil, that we more than ever felt the justice of the poet's sketch—

> Far from the madding crowd's ignoble strife
> Their sober wishes never learn to stray,
> Along the cool, sequester'd vale of life,
> They keep the noiseless tenour of their way.

In our note-book, transcribed from a marble tablet, close to the altar of the church, we find this memorial:—

"Near this place lieth the body of *Dorothy Meymott*, eldest daughter of *Samuel Meymott*, M.A. (the first rector of this parish), and *Dorothy* his wife. She died Sept. 13, 1734.

> Those virtues which in *Dorcas* shone,
> Were, without flattery, her own;
> With *Martha's* care, she had the art
> To join good *Mary's* better part;
> Free'd now from care, she wears a crown,
> Which, thro' her Jesus, is her own;
> Why, then, should we her absence grieve,
> Who's happier now than when alive?"

Now, though there is more of tenderness and truth than of poetry in these lines, yet they came upon us with more than common interest, because the old dame who opened for us the church door, told us that they were written by Dorothy Meymott's father, who survived her forty years. That she remembered him well—"and no one could help loving him; but Dr. Milne, who was next rector, never lived among us in the parish." This was said in such an artless way, yet conveyed such an intimation, that all felt they were then as sheep without a shepherd, that we felt the evil of a non-resident permanent incumbent in all its force and truthfulness.

At that time we little thought that we should ever care to know anything further about that non-resident rector, but now we find that he was DR. COLIN MILNE, author of *A Botanical Dictionary*, and other works which contain much that was interesting to the gardeners of his day, and, indeed, of our own, for he did not die until the early part of the present century. He is thus spoken of by a contemporary biographer.

On the 2nd of October, 1815, died at Deptford, in his 72nd year, the Rev. Colin Milne, LL.D., rector of North Chapel, Sussex, evening preacher to the City of London Lying-in Hospital, and lecturer of the Old and New Churches, Deptford; a popular preacher, and celebrated botanist. In 1770, he published a "Botanical Dictionary," 12mo; and afterwards wrote "Institutes of Botany," in two parts, 4to; a Supplement to his Botanical Dictionary; and vol. i. of "Indigenous Botany," 8vo, a most useful book, published, in 1793, in association with Mr. Alexander Gordon. In 1775, he published "The Boldness and Freedom of Apostolical Evidence, recommended to the imitation of Ministers: at the death of the Reverend and learned James Bate, M.A., late rector of St. Paul's, Deptford." In 1778, Dr. Milne preached the anniversary sermon for the Royal Humane Society, being the fourth that was preached for that excellent Institution, which has also since been indebted to him for many similar exertions in its behalf. Besides other single Discourses, he also published a volume of Sermons, in 1780.—In the "Literary Anecdotes of the Eighteenth Century," III. 760, is given a curious illustration of the art and mystery of Bible-making, as formerly not unfrequently practised by speculating booksellers. It is the narrative of Dr. Robert Sanders (a laborious compiler of popular books) who had been employed to write a Commentary on the Bible, but whose name, as he was not a clergyman, could not with much propriety be prefixed to it. Among other respectable clergymen who refused to sanction with their name and reputation an undertaking with which they were to have no other connexion, was Dr. Colin Milne, who honestly said, that although he had no doubts concerning Dr. Sanders's abilities, yet he would not have his name affixed to what he was not to write."

A third edition of the Botanical Dictionary was published in 1805.

ON the 14th instant was celebrated the ninth annual festival of *The Royal Gardeners' Benevolent Institution*, and one hundred and thirty gentleman, all in various degrees interested in the progress of gardening, and the welfare of its practitioners, were presided over upon this occasion by Mr. Charles Dickens. Among those present were H. T. Hope, M.P.; Sir J. V. B. Johnston, well known in the north for his efforts in promoting the cultivation of the soil; Sir Joseph Paxton; Charles Fuller, Esq., the prime and energetic preserver of the Crystal Palace; Robert Hanbury, Esq., and C. B. Warner, Esq., the well-known patrons of floriculture; Mr. Mechi, whose never-faultering cheer to the cultivator is "Forward!" Mr. Spencer, the able gardener at Bowood; and many others favourably known as excellent horticulturists. The assemblage altogether was the most successful that had ever gathered for the support of the Institution, and £351 were subscribed at the tables in aid of its funds.

We are quite sure the Chairman felt that the man of literature is never more gracefully employed, and is never better exercising the gifts which qualify him for his mission, than in pleading the cause of charity. In this instance he did so most effectually, and sure are we that those present on the occasion, when gathering pleasant and useful thoughts from his "Household Words" at home, will receive them more mindfully as they remember the manly earnestness, and the vocal eloquence which they witnessed in the author on this day.

The musical arrangements were under the direction of Mr. Genge, assisted by Miss Wells, Miss J. Wells, Master De Solla, Mr. Kenney, and Mr. Farquharson Smith, who presided at the pianoforte.

In aid of the dessert, Sir William Paxton furnished pine-apples, the largest weighing 9½lbs., the grapes were from the gardens of the Marquis of Aylesbury and the Marquis of Lansdowne.

The usual loyal toasts having been given and responded to,

The Chairman said—I have now to offer you a toast which expresses our interest in, and our cordial good wishes for, the institution in whose behalf we have met here to-day (cheers). For three times three years it has been strengthened and encouraged by assemblies like these, and with three times three cheers we will shortly, if you please, urge it onwards in its prosperous career (loud cheers). While occupying this place, I feel myself somewhat like a counsel for a plaintiff, with nobody on the other side (cheers and laughter); but although the society had numbered 99 times nine instead of three times three years, I must have troubled you with a few facts from the very short brief with which I have been provided. That desperate old *gardener*, Time, does so *transplant* and *remove;* and, besides, it is to be hoped that the number of our friends does so augment with the ending years, that it becomes absolutely necessary, even in a company like this, to recapitulate the merits of my case. The institution was founded in 1838; and during the first five years of its existence, it appears to have been not particularly robust. It seems to have been placed in rather a *shady* position (cheers), and, after its *planting*, to have received somewhat more than its needful allowance of *cold water* (cheers and laughter). In 1848, I believe, it was removed to a more sunny situation; and, being *grafted* upon a newer and more energetic *stock*, began to *blossom*, became a sturdy and healthy *tree*, and now, under the *shelter* of its extended *branches*, 35 old *gardeners* daily assemble (cheers). It is to be particularly observed, in respect to this institution, that, unlike old foundations (of which I wish I could say as much), what it is in name it is in fact, and the class for whose benefit it purports to be designed have the full and entire advantage of it (cheers). All the pensioners on its list are veritable gardeners, or the wives of gardeners; and, besides, it has on its own books this excellent rule:—"Any gardener who has subscribed for 15 years, and has complied with the rules, and falls into distress, may, if he please, be placed on the pension list without solicitation, without canvas, without election, as his independent right (loud cheers). I lay great stress on this honourable characteristic, because I always hold that the main principle of every philanthropic society should be to help those who help themselves, and help others; also to merge all considerations of our own patronage, and of our own bustling importance in the sacred duty of relieving such persons when they fall into affliction, with the utmost possible delicacy, and without the least chance of carrying a pang to their hearts, or of bringing a blush into their honest cheeks (loud cheers). That the society's pensioners do not become such, so long as they are able to perform the duty of supporting themselves, is evident, from the fact that the average age of the pensioners on this list is 77 years (cheers). That they are not wastefully relieved—though what is little to a society is much to them—is shown by the whole sum expended on relief being only £500 a-year. That no narrow confines are favoured in the selection of pensioners will be clear, when I tell you that they come from all parts of England—east, west, north, and south (cheers). That the expenses of offices and management are not disproportionate to the society's income is obvious, by their being defrayed by the annual subscriptions and the interest of the funded stock, which is now £2,700, and which, after this evening's proceedings, I trust will be increased to 3,000 guineas (loud cheers). Such, gentlemen, is the institution for which I now appeal to you for support. I appeal first, and particularly to the employers and employed amongst the class from which our pensioners are taken, and also to the public of all degrees and of all ranks. And to the latter I shall not address myself in vain for a society which has for its president a nobleman of the most generous and munificent spirit in this land (the Duke of Devonshire), whose whole possessions, from end to end, are a garden of taste and beauty, and whose gardener's laurels are famous through the world (loud and long-continued cheering). I notice, with great pleasure, in the list of vice-presidents, the names of noblemen and gentlemen of great influence and station (cheers). I am also particularly struck, on looking through the pages of the report, to see the number of nurserymen and seedsmen who contribute to the funds, and the handsome sums written opposite their names (cheers). It is a worthy and generous example to those gardeners who may become masters themselves; and I really hope that the day will come when every decent gardener in England will regard this society as a part of his calling—(cheers)—and that, if he thinks he never may want its aid himself, he will still regard it as a duty to belong to it, because others may, and indeed always will, want its cherishing assistance (cheers). Gardeners there are by scores, I fear, who know gold and silver more as the colours of fruit and flowers than as coins in their own pockets, and exposure to all weathers, and all temperatures, render them particularly liable to infirmity when old age comes on (cheers). To gardeners, of all men, from their continual observations of the mutations of nature, the changing seasons, the shortening days, the falling leaf, the withering tree, all suggest lessons of worldly, prudent, and Christian kindness (cheers). But I appeal to all here, and all not here, who are anything but gardeners, except as we trace in a direct line from the gardener, Adam, and his wife—(cheers)—on behalf of this institution. After all, the universality which awaits every exertion of the gardener's skill is one of the characteristics of this pursuit which ought to make it patronised by everybody. If an improvement be made by the Queen, by my lord, by my lady, or by Sir John, it is not unreasonable to suppose that it will be quickly down to the costermonger in our streets (loud cheers and laughter). If it be no heresy to say so, I think the market-gardeners of this metropolis are teaching lessons of practical wisdom to the farmers of this day (cheers). In the colour of a flower there cannot be, in its very nature, anything very exclusive or very selfish; and the wind that to-day blows the scent of the honeysuckle over the cottager's porch to the portico of the squire's hall, brings to-morrow the rarer, but not richer and sweeter, odours from his expensive gardens to the lowly cottage (cheers). The sun, which shines alike upon the just and the unjust, sheds its life-giving beams also alike upon the poor man's garden and that of the rich man—communicating to neither any exclusive delights (cheers). We often hear of gentlemen spending large sums of money in developing a flower, or in deepening a colour. The improvement in a short time becomes general, and thus that gentleman's gardener is, in short, my gardener, and everybody's else (a laugh). Speaking as a man acquainted with some books, I have found that in flowers our poets have found their most beautiful illustrations, and most true as well as most fanciful sentiments. The garden has been to them a book of inspiration. It is a book, too, which, when we see it lying at the labourer's door, tells us that that labourer is a happier and a better man, for it is not too much to say that gardening is invariably connected with peace and happiness. Gardeners are associated in our minds with all countries, and all degrees of men, and with all periods of time. We know that painters, and sculptors, and statesmen, and men of war, and men who have agreed in nothing else, have agreed, in all ages, to delight in gardens. We know that the most ancient people of the earth had gardens; and that where nothing but heaps of sand are now found, and arid desolation now reigns, gardens once smiled, and the gorgeous blossoms of the east shed their fragrance on places which would have been long ago forgotten, but for the ruined temples which, in those distant ages, stood in their gardens (cheers). We know that the ancients wore crowns of flowers; and the laurels and the bays have stimulated many a noble heart to deeds of heroism and virtue (cheers). We know that, in China, hundreds of acres of gardens float about the rivers; and, indeed, in all countries gardening is the favourite recreation of the people (cheers). In this country its love is deeply implanted in the breasts of everybody. We see the weaver striving for a pigmy garden on his house-top—we see the poor citizen wrestling with the smoke for his little bower of scarlet runners—we know how very many, who have no scrap of land to call their own, and will never have until they lie their length within the ground, and have past for ever the portals of life, still cultivate their favourite flowers (cheers)—we know that in factories and workshops we may find

plants—and I have seen the poor prisoner, condemned to linger out year after year within the narrow limits of his place of confinement, gardening in his cell (loud cheers). Of the exponents of a language so universal—of the patient followers of nature in their efforts to produce the finest forms and the richest colours of her most lovely creations, which we enjoy alike at all times of life, and which, whether on the bosom of beauty, or the breast of old age, are alike lovely—surely it is not too much to say that such men have a hold upon our remembrance when they themselves need comfort (cheers). And now, therefore, I come at last to the three-times-three cheers with which I ask you most heartily to drink success to "The Gardeners' Royal Benevolent Institution, and health to its noble President, the Duke of Devonshire" (loud and continued cheering).

The toast was drunk with great enthusiasm.

Sir Joseph Paxton said, when he entered the room that evening, he was not aware that he should be called upon to respond to the toast which they had just heard given in such feeling language by the Chairman. That toast was to him a most impressive and important one, and resolved itself into two parts. The first was success to this Institution, and that required from him the expression of his warmest sympathy, because he had been placed by good fortune in a position to assist it. The latter part of the toast received from him his warmest testimony of lively gratitude, for the manner in which the company had drank the health of the noble Duke, the President of the Society, with whom he had been connected for a period of twenty-six years. He was perfectly well aware that he need not make any remark on the character of the President, or on the importance of the Society, having the Duke of Devonshire for its President (cheers); because they well knew, in common with himself, that the noble Duke had done more, and had given more assistance to horticulture than any one individual in the kingdom. He hoped those around him would not think him egotistical in saying, that he looked at the vast improvements which had taken place as attributable to the great support which the Duke of Devonshire had given through him (Sir Joseph Paxton) to every branch of horticulture. He did not mean to say that he had been in advance of his neighbours, but he meant to say that the encouragement of the noble Duke had given a feature and an embodiment to the science, and had brought forward the energies of many intelligent men, from which great results had accrued. It was not many years ago, perhaps some few years ago only, that a great stimulus was given to the science by the erection of the great conservatory at Chatsworth. One acre was first brought into cultivation under a new principle; and this gave a stimulus to increased exertion,—that stimulus was continued, and he received encouragement as great as ever. The Crystal Palace had emanated from the example at Chatsworth, and he considered that the merit of the Crystal structure which had been the delight of this and all civilized nations of Europe, was as much due to the Duke of Devonshire, as to himself (applause). Through the noble Duke's liberality, he had the means to make various experiments. The Duke had ever been his constant friend, and had supported him through all his trials. When the question was raised as to the Crystal Palace standing, the Duke gave him his most hearty assistance. But it was eventually decided that the Palace should not stand in Hyde Park, and after some time he was solicited, by a spirited company, to aid them in removing the Crystal Palace to a new site. The matter was subsequently argued in the House of Peers, and there the noble Duke gave him his cordial support. Within the last week the subject had become one of much greater interest, and he should have a new design shortly ready, which had more consideration from him than the original design had. In reference to his new design, the edifice would be a more magnificent pile (at Sydenham). That in Hyde Park had a transept 108 feet high, but that at Sydenham would be with three transepts of 200 feet high. In this new building would be exhibited the magnificence of nature, in the shape of plants and shrubs. The gentlemen who had engaged in the undertaking were spirited men, and he had no doubt that by that day twelvemonth he should be able to give the public a good account of the Crystal Palace. He now came to the Gardeners' Benevolent Fund. He really could not find words adequate to express his admiration of, and his gratitude to, his friend, Mr. Charles Dickens, for the very feeling, and warm, and enthusiastic manner in which he had introduced the toast to their notice. He was sure he only spoke the sentiments of every one present in thanking their Chairman most cordially. He was satisfied that his amiable friend had never done more good in his life-time than in patronizing this institution (cheers).

Sir J. V. B. Johnstone regretted the unavoidable absence of two noble friends of his, inasmuch as that fact involved him in the task of proposing the toast which he was about to give. The toast he had to propose, was the health of one whose name and reputation were as familiar to the mouths of Englishmen as his own "household words" (great cheering). He presumed it was not necessary for him to say that it was the health of the Chairman, who had been a most successful labourer in the garden of literature. He had, on various occasions, garnered bouquets of varied forms, and their fragrance remained to charm and delight all. He would fain hope that those which were even now annuals would become perennials. He was sure the company would join him in assuring the respected Chairman how deeply the Society appreciated his presence amongst them that day. If their Chairman was not able to make them all unbutton their breeches' pockets, he did not know who could (laughter). He hoped every one would join him in giving nine times nine cheers. He had to propose the health of the Chairman (drank with immense enthusiasm).

Mr. Dickens briefly returned thanks; and after the "Vice Presidents," "Nursery and Seedsmen," "Botanical and Horticultural Societies of London," "Stewards," and "Ladies," had been appropriately drank, the company separated.

To the exertions of the Secretary, Mr. E. R. Cutler, great credit was due for the manner in which the entertainment was got up, especially with reference to the arrangement of the very elegant dessert. The entertainment was one which gave universal satisfaction.

Mr. Higgs was the toastmaster, and discharged the duties of his office with his usual discretion.

FORSYTH MSS.

Of the writer of the following letter, Mr. Logan Henderson, we regret that we possess no biographical particulars, except that he was botanist to the Emperor of Russia. It is dated Crimea, 12th September, 1787.

MR. L. HENDERSON TO MR. FORSYTH.

The difficulty of getting packets, or even letters, conveyed with any degree of safety, has prevented me from sending to you many seeds which I have collected here. I now send you a few seeds of the plant which they use as horse-radish, the root grows to above three-and-a-half inches in diameter, and *some feet* long. I have them two feet long, and near that size at the smallest end. I have not had an opportunity of examining the flower, which is white, but I believe it is a *Crambe*.* The leaf is broad, ragged, and waved, something like Scotch kale. I shall be glad if you can cultivate that plant in England, as it is much preferable to horse-radish, as it is less heating. If I eat the smallest quantity of the English horse-radish at night, it throws me into fever; but a plateful of the sort we have here does not affect me. I mention this as a proof of its good quality. It grows on dry pasture ground. You will also receive some seed of a very beautiful winged *Salvia*, with a trailing stalk, and very large white flower spotted with red; this is a species undescribed, and peculiar to the Crimea. The seed is of last year; I have not been able to procure any this year. It also grows on dry ground. The seed of the *Salvia* with the purple *bractea* is of this year, but it seems to degenerate on cultivation. You will receive a few seeds of a *red bramble*, which is, as I believe, a new species. I found it in plenty near the top of Cheterdag, our highest mountain here. The *Gypsophila perfoliata* is a new *variety*, with a red flower.

I have several other seeds for you, but they are not now at hand, and I don't wish to let slip this opportunity. As

* It is *Crambe cordifolia*, or Heart-leaved Sea-kale.

to minerals, we have none worth your notice; all the rocks which I have examined are calcareous, containing shells, but no great variety. The most remarkable seems the pearl oyster, and another large oyster, the shells of which are about one-and-a-half inch thick, *one shell*. Sea fish we have few, and bad, excepting the sturgeon, and another large fish they catch at the mouth of the sea of Azoph. As to sea shell-fish, there are none but a few very small bad oysters found in the Bay of Caffa. There are plenty of cray-fish in the rivers, and in one river, about twelve miles east of Sharazbazer, there is a muscle with a very fine white shell, about one-eighth-of-an-inch in thickness. We have an animal about the size of a rat, that lives in holes in the ground; its head is exactly like a hare, its hind legs are more than twice the length of its fore legs; by this means it is enabled to jump so far it is very difficult to catch it. The tail is long, and has long hair upon it, and lays flat on the ground.

I make no doubt but your newspapers will be full of a formidable invasion intended by the Turks; we are not very much in dread of them, though we are not without our grievances, which I shall take another opportunity to mention to you.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Barton-upon-Humber. First show 14th July (*Sec.* C. Ball.)
Bath, June 24th, July 29th, Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)
Botanic (Royal), June 30.
Bridgewater, Sept. 22. (*Secs.* Mr. J. Leaker, and Mr. J. Hayward.)
Brigg, July 7th, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
Bury St. Edmunds, June 25, at Sir H. Bunbury's; July 30 (Picotees); Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
Caledonian (Inverleith Row), Edinburgh, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, Aug. 26.
Chiswick, July 10.
Clapham, July 8, Sept. 11.
Colchester and East Essex, Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Derby, Aug. 4.
Durham, Sept. 8.
Forfarshire (Eastern), July 21 (Brechin); Sept. 15 (Arbroath).
Hampshire, July 1 (Winchester), Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hampton Wick, July 1. (*Sec.* Mr. B. Regester.)
Hexham, Sept. 15, 16.
Hull, June 24, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), June 24, Sept. 9.
Lewes Grand National, July 14 and 15.
Lincoln, July 27, Sept. 14.
Liverpool, June 24, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), July 13†, 27, Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Maidstone. Fete. June 24. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), July 9, Sept. 10.
Newbury, Sept. 3.
North London, Sept. 14; Nov. 23, Chrysanthemum.
Northampton, June 29, Rose and Pink; July 27, Carnation; Sept. 27, Dahlia.
Oxfordshire (Royal), July 29; Sept. 23. (*Secs.*, C. Tawney, and W. Undershell, Esqrs.)
Peebleshire, July 13th, Sept. 14th. (*Sec.*, J. Stirling.)
Ponteland (Newcastle-upon-Tyne), July 14; Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)
South Devon Botanical and Horticultural, July 13; Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), July 15†, 21, Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, Aug. 6, Sept. 17.
Whitehaven, July 9, Pinks; Sept. 17, Dahlias.

POULTRY SHOWS.

Agricultural Society (Royal), Lewes, July 12.
Birmingham and Midland Counties, 14th, 15th, 16th, and 17th December.
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).
Cornwall (Penzance), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)

† For seedlings only.

FRUITS FOR EXHIBITION.

One of the chief features in modern horticulture is the frequency and rapidly advancing character of our exhibitions. Every town of any note can boast of results in its suburban gardens, attributable to these grand exciters to emulation; these progression centres, whence innumerable rays diverge, the termination of which is not easily ascertained. All honour to "the press," in the first place; for these would have been but hole-and-corner affairs without the mediation of that mighty engine, by far more powerful than the battering-rams of old,—able to break down and destroy the most ancient and powerful prejudices. The press, however, was not a mere vehicle in the affair; it assumed the office of pioneer, prompter, and commissariat; in each department alike famous.

It has been a subject of grave complaint on various sides, that exhibitions are capricious things—a mere fashion of the day—in their very essence ephemeral. In taking a retrospective glance over the last twenty years, we do remember some sage old gentleman of the blue apron affirming stoutly that our shows were at fever heat, and that a state of collapse must inevitably ensue. One of the olden time, too, and a much respected master, and first-rate gardener in his day, repeatedly declared that "books and exhibitions would ruin gardening." Now it is not quite clear what the old gentlemen meant by "gardening." It does seem to me to be a most latitudinarian mode of expression, strongly reminding me of those phraseological ambiguities so frequently used by our great politicians, such as "the good of the nation," "the sense of the country," &c.; modes of expression in use before the days of those worthies of old who made shrines for the great goddess Diana. Gardening, however, is not ruined; gardeners, as a class, although not progressing as to comforts in proportion to some other classes of society, still maintaining a good social position, and even recognized as useful auxiliaries to our agriculturists. Books, exhibitions, &c., therefore, have done little harm, but much good; had it, however, been the reverse, who could have stayed the advancing waves,—who could, like Dame Partington, have gone mop in hand to keep back the ocean wave?

The great July shows are well known as concentrating the strength of our great fruit exhibitors; and as some of our readers may wish to avail themselves of the preparatory training necessary, we will offer a few remarks; for fruits may be "trained" for exhibition as well as horses. The four principal means employed are "stopping;" the application of manurial matters; thinning the fruit; and a judicious thinning of the young spray where requisite. To which may be added, as necessary auxi-

liaries on some occasions, leaf-removal, wholly or partial, retardation, &c.

Stopping has a direct tendency to augment the elaborative powers in the immediate vicinity of any given fruit or fruits; its effects on the system of the tree are to equalise the sap, and to exercise a temporary restriction on the rampant propensities of the tree. The enlargement of the volume of the principal or first-formed leaves, and, by consequence, the increase of their powers, is one of the most important matters connected with a judicious stopping. It must be remembered, that this stopping must be judiciously managed; it will not do to stop at any period. Every tree, every shoot, must first be permitted to develope what may be considered a proper amount of healthy leaves, or reciprocity in the functions of the tree will be deranged.

The application of *manurial matters* is next in order; and it need scarcely be observed, that such is an assistant in increasing the capacity and powers of the leaves. We trust that none of our younger readers will suppose that the crude juices of manurial matters will pass at once into the fruit. No; they must first be appropriated by the foliage, and thus be made into food such as the fruit is qualified to receive—accretive matter. It is most absurd to witness the immense mystery with which some of our growers and exhibitors of big gooseberries enshrined their processes. Ask some of these worthies how they get them so large, and they will shrug, nod, or wink, as the case may be, and remain obscure. "Obscurity," said Burke, or some other fine writer, "is one source of the sublime;" *ergo*, the growers of big gooseberries are most sublime gentlemen. To be fair; it is the minority, in holes and corners in the far west, or, rather, north west, that is meant; we have met with many far superior to this description. About sixteen years since, at a "show" of this kind, one old squire bravely asserted that he could introduce lumps of fat into the gooseberries; and surely his "Eagles" were enough to sap the foundation of the faith of those not "well up," for he had a berry of the Eagle—then a first-rate kind—which had a huge white lump beneath the skin on one side. If any one asks why Lancashire and Cheshire are so famous for big gooseberries, we answer, because the gooseberry, although it loves a mellow soil, equally loves a moist atmosphere. We have known these gooseberry men place a saucer of water beneath the supposed winning berry; no doubt to meet, in a high degree, the absorbing powers of fruit as well as leaf, and to ward off or soften down any vicissitude tending to dryness. Doubtless, the old chap's lump of fat was simply the results of a high amount of absorbance preponderating on one side.

Thinning the fruit; extra thinning, we mean, for exhibition purposes. The influence of this proceeding all must be familiar with; nature herself gives us first lessons in this case. Who has not seen an apple-tree, or a cherry-tree, cast off fruit that could not well be sustained without prejudice to the remaining crop, and even to the well-being of the tree? Those who want to scrape acquaintance with the gold medals of our societies must thin with no niggardly hand. This kind of thinning is by no means compatible with the highest amount of profit, and hence our market-gardeners are not fond of rushing into the exhibition arena. Of course, a given tree can only elaborate a given amount of accretive matter, that amount regulated by the aggregate surface of well-disposed foliage. Too heavy a draw on this alimentary stock will not only render the fruit smaller, but will tax the very vitality of the tree.

Thinning of the young spray.—Not every tree produces that even amount of young shoots which is most conducive to the most fruitful condition. The thinning for exhibition fruit must be of a more special character than is conveyed under the ordinary term and practice of disbudding. Here, not a surplus shoot should be permitted on any pretext; not one which is not either contributary to the fruit or conducive to the welfare of the system of the tree. Thinning, here, is intended as a *total* removal of the spray in question. A good vine-dresser, having an exhibition in his eye, will not encourage many surplus shoots. Vines, however, form a slight exception to fruits in general; of all our fruits, none appears to submit to, or require, a more severe hand than the vine. Notwithstanding all this, a good vine-dresser is as chary of a fine leaf on his favourite bunch-shoot as a miser of his gold; and we should like to see the man who would dare to strip one of the principal leaves off a shoot containing an exhibition bunch in the presence of the ardent proprietor; such a man would possess valour enough to lead an expedition against Nicholas of the far north, although his amount of prudence might be doubted.

We have thus touched some of the principles which, judiciously applied, are capable of enhancing the size and quality of fruits. In a subsequent paper, we will endeavour to show their application, and bring the matter closer home. R. Errington.

EXHIBITION OF THE BOTANICAL SOCIETY AT THEIR GARDEN, REGENT'S PARK.

June 9th.

They say that the proper education of cooks and gardeners ought to embrace the circle of the sciences, as much to teach them the necessary patience to endure the disappointments incidental to their respective callings, as that they have to deal with subjects—simples, and compounds—which are founded, or ought to be so, and also compounded, on scientific principles. Cooks say that the most trying and tiresome thing in the world is to have to stand the heat and hurry of getting up a dinner under a full conviction that one must sit down and eat it in solitude, and ten times worse if, after inviting and expecting a large company, none of the guests can come. But gardeners assert, with better reason, that that is as nothing to the disappointment of providing for an exhibition of plants and flowers, and, after all, the show-day turns out so wet and dreary, that people cannot leave their homes but at the risk of their lives. So it happened on the last Derby-day at Epsom, on the best day at Ascot, and on the finest exhibition which the Botanical Society has yet had to record. The rain began that eventful morning about four o'clock, and, in the neighbourhood of London, continued, without intermission, for six-and-thirty hours; and it was as warm as it was wet, and "as still as thought," so that the most delicate plant could take no harm. All the tents were brim full of the finest grown plants which this country could produce, and which no other country can imitate. The *Rhododendrons* under the monster tent were just about their prime, and the garden itself, as far as one could judge, was in its best summer dress; but all this was lost to the thousands who would have been there if they could have ventured out of doors.

At all these great exhibitions, the first prize, or the largest medal, is given to the best collection of stove and greenhouse plants. The number of plants have varied from time to time; on this occasion there were twenty-five plants in the large collections, and every one of the five-and-twenty would have been admitted, ten years ago, to compete as single specimens of extraordinary merit, and prizes would have been awarded to at least a score of them. Both this Society and the Horticultural Society still keep up a class for specimen plants; that is, they will give a handsome prize to a single plant, if the judges think it is better grown than any plant in a collection This was a very great stimulus to plant-growers for a

long while, but now we gardeners see plainly enough that it has fulfilled the ends proposed, and that there is no use nor reason for continuing prizes for single specimens at the present day, because every other plant all over the tents is a full and fair "specimen plant;" then, if one plant is entitled to a prize, why not give single plant prizes to one-half of the plants exhibited? Being an old gardener, well-known, and now having more time to spare than any gardener or nurseryman whatever, I have better means of collecting or receiving the opinions of our craft than most people would believe. Add to this, a free and independent spirit of the Rob Roy class, and you see how people of all opinions will trust me with their thoughts, although I constantly say, that I shall never keep a secret, if I think any good will come of telling it. All this is to show that it is not my own individual thoughts or impressions only that I often put forth in my writings, but rather the collective opinions or suggestions of many gardeners and amateurs; but to take the whole responsibility on myself, I write in the single personal pronoun, instead of the *we*.

Well, then, on this footing, I think that the two great societies are entirely wrong in allowing duplicate specimens in the collections, both small and great, thus limiting the May, June, and July flowering plants to a minimum, instead of endeavouring to increase the numbers as much as possible, in order that their country subscribers should benefit as largely as possible by attending their exhibitions, to see as great a variety of plants as gardeners could manage to flower at the time, then they would be able to make good selections for their plant-houses in the country; thus the shows, the nursery trade, and the plant establishments all over the country would be benefited, and certainly there is no stint of medals or money to prevent all this and more besides being done. Instead of all this, however, we are doing exactly the reverse—encouraging purse-gardening on the one hand, and the easiest style of gardening on the other. Whoever has most money can put up the largest houses to grow plants in to an enormous size, and then the fewest plants and the easiest to grow will suffice to fill these houses, and win the prizes. If A. B. and C. represent three plants which require a great deal of judgment, care, and forethought, to grow and flower them well, and D. stand for another plant, which a cottage gardener could easily manage if he had room for it, an exhibitor is allowed to choose D, and put up three plants of it in one collection, and in one day, too, if he chooses, and A. B. and C. may go to the wall. They have excluded *Cockscombs* for many years from these shows, and so they ought; but I know there is more real merit, or real good gardening in growing a *Cockscomb* to perfection, than in growing many of the plants in the "large collections." On the other hand, it is four to one more difficult to get up an *Oleander* to an exhibition trim, than a *Stephanotis*, or *Alamanda*, *Ixora*, *Cyrtoceras*, *Franciscea*, and *Clerodendron*; so an *Oleander* is never seen there, but the others are never absent, and they come in duplicates and triplicates almost at every show. I have even seen such common stuff as the pink *Coleonema* in duplicates, in full collections, and that not long since; and after all this, the most difficult thing in the world is to win a first prize in these days, the societies having allowed exhibitors to grow the very commonest plants, and to put up as many of one sort as they like. It has come to this pass at last, that all the plants have equal merit; all the collections the same; and all the judges in the world can find nothing at all in the plants, or in the collections, to represent the differences which the different values of the medals would lead one to suppose. It is very likely, however, that if we had had a fine day, and the garden had been full of people, gardeners would have found some better amusement than running over such things; and I wish they would, for not one out of ten of them have any idea of the difficulty that is encountered in the private management of these large concerns.

Rhododendrons.—The display made by these, under an immense tent, without any sunlight, and under a torrent of rain, with only here and there two or three people moving slowly along, and owing to the judicious way the place is laid out, the whole of this is seen under the eye from one or two points; I say, the display made, and the effect produced on the senses, was singularly striking: it was like being in a dream, walking in a fairy land, and conscious that it was only a dream, but still clinging to the idea of being awake; it was, to me, melancholy grand. Everybody in the kingdom ought to see this tent of rhododendrons before they are out of flower, so I shall say no more of them now than, that some of the standards looked at a distance like apple-trees covered with scarlet *Nonpareils*, and from this size down to that of a sixpenny geranium, every other size, form, and colour peculiar to the family was to be seen in every group, or bed, or border, for they are all planted in the ground.

There were a few specimens on a stand, by Mr. Standish himself, of the new *Sikkim Rhododendrons*, which are little more than two years old. One called *Falconerii* had the largest leaves, and they looked as if made up of the leaves of the Chinese Medlar (Loquat) and an European Sorbus, with a whitish down on the under side. *Niveum* had the next largest leaves; they were long, large, and leathery, with a white down beneath: if these had been shown without the plants, few gardeners would think them to be rhododendron leaves, while *Argenteum*, the third largest-leafed kind, could not be mistaken; the leaves of this have no down nor rust on the underside. *Ciliatum*, the one which flowered so early, and which I have mentioned as being exhibited in Regent Street, was the last on the stand; it belongs to the Azalea section of the rhododendron, and to the Chinese section of the azalea, and when all the Sikkim and other rhododendrons come to be collected into one place, I think they will be found to run in a natural and easy gradation from the tree rhododendrons, of 30 to 40 feet high, down to *Azalea amœna*, which does not rise to half so many inches, and that some of each of all the sections will interbreed with each other, so that it cannot be said where the old rhododendrons end or the new azaleas begin. Of the Chinese azaleas at this show, *decora*, *vivicans*, and *exquisita* were the best.

Tall cacti, as they are now called, have been very sparingly brought out this season; only one collection, and that, I think, by Mr. Green, both here and at Chiswick. The cactus called *Epiphyllum crenatum*, anybody might grow who can manage any of the old window sorts, and it gives the nearest idea of the night-blowing cactus of all the sorts requiring little skill to grow them. There were two kinds of *crenatum* in beautiful bloom here; the second one called *crenatum grandiflorum*, a bad name by the way, as there is not the slightest difference in the flowers, but the *grandis* of the thing is in the growth of the plant, which is much stronger, and more like some of the old flat-stemmed sorts than the true species; it deserves extended cultivation.

Pelargoniums.—I had another close survey of all that were exhibited, and those who prefer distinct colours, or shades, or well-marked sorts, to the best florists' flowers, will not be disappointed if they beg, borrow, or purchase from my selection, beginning with the highest-coloured ones. *Basilisk*, a new seedling, is the very best yet seen, call it number 1; *Incomparable* is next; 3, *Prince of Orange*; and, 4, *Salamander*. Hoyle's *Magnet* is as good as any of these, with the additional advantage of being a real florists' flower. These five geraniums would break the usual sameness of geraniums in the largest conservatory in the country. Of whites, we had here three excellent ones; the best is

Mont Blanc, a pure virgin white, with a clear, scarlet, small spot in each of the back petals; *Pearl* is the next best white, and *Emma* the third and last. I put down these degrees of comparison at each show, as they occur on the spot, and at the end of the season I shall collect them in one place for reference; and very likely I may see others that I would prefer before some of these, so that I shall be forced to give the final choice some day or other. Out of the great mass of geraniums which look so much alike, I marked the following as the most distinct:—*Gulielma*, *Rosamond*, *Centurion*, *Negress*, *Pretty Polly*, and *Optima;* and out of a lot of new seedlings, *Oscar* and *Aurelia* were the only two I would select for myself. I saw two great blunders in this class of geraniums, of which I shall only mention one. *Ocellatum*, a true fancy sort, and a new strain, too, for that class, but it was placed among the florists' varieties, where its character and beauty were entirely lost; it ought to stand between *Gaity* and *Hero of Surrey*, in the fancy class. Some months ago, I said, from memory, that this *Ocellatum* was a new strain in the fancies, got from some relationship of *Yetmaniana grandiflora*, and now I am confirmed in this opinion; and if *Ocellatum* is a breeder, it should be carefully worked back with the Yetmanianum class for bedders. The following fancies are to be added to those I have already named:—*Lady St. Germains*, *Celestial*, *Gaity*, *Triumphant*, and *Miss Emily Fielding;* their characters shall be given some other day. A variety of the scarlet breed, with flowers like those of *Lucia Rosea*, and the leaves of *Compactum*, will make a pretty pot plant for forcing in the spring; it is called *Kingsbury Favourite*, which does not make it the more favourable in my eyes. There was also a new form of the variegated scarlet, called *Flower of the Day*, with purple marking between the white and green of the leaf; and if that is permanent, and will stand the sun, this will be the best of the two for beds. *Triumphant* (Ambrose's) is the most scarlet of all the fancies; what a splendid bed it would make if it stands the sun and rain, and be a perpetual bloomer!

Of stove plants not mentioned before, *Hoya bella* was particularly neat and well grown; it really is a fine thing when it comes to a large size. *Franciscea augusta*, with fine heads of sweet flowers, more crowded together and much darker than those of *acuminata*. *Ixora alba*, in all respects like the size, shape, and profusion of bloom of the old *coccinea*, but the leaves are very different, and much larger. *I. javanica*, of which there are two or three varieties, is also very good, a mixed colour of orange and brown; and *I. crocata*, a bright yellowish flower. *Alamanda grandiflora* is a much smaller plant, at least, not near so large as *cathartica;* nor are the flowers generally so large as in the old sort, notwithstanding the name.

Of new stove plants, we had one called *Munronia javanica*, which, I think, will turn out a nice thing for drawing-rooms; it belongs to the order of Meliads, but as yet few gardeners know many plants in this order, let me say that it looks exactly like a young plant of *Gardenia Stanlyana*, with the pure white flowers of some jasminum. *Panax excelsa* promises to be a good thing; leaves and growth similar to *Brownea*, with umbrels of coral buds opening into small pink flowers—say like a bunch of elderberry flowers if they were of that colour. *Artocarpus imperialis* was quite new to me; it is one of the bread-fruit trees, and looks not unlike a young Astrapæa, but not in flower. *Jacaranda caroba*, looking like a young ash, would look fine in a large stove, if it would flower freely. D. Beaton.

(*To be continued.*)

EXHIBITIONS AND EXHIBITORS.

It has been reported of an ancient worthy, that when defeated in a contest for honour and office he expressed his gratitude that his country possessed so many men better than himself. What a satire upon, and a rebuke to, the heart burnings left by political and official contests, and the grumblings and frettings of defeated ambition, when the chief reward was merely the honour of standing in a first, second, or third place! Disagreeable at all times, these frettings are never more unseemly than when they manifest themselves at floral and horticultural exhibitions. Everything there invites to that delight which is blended with repose. How jarring, therefore, does one note of wrangle, or discontent, from us blue aproners break in upon that harmony. Yet that harsh note has sometimes proved the source of a discord fatal to many a once flourishing society. So sensible were committees of management of this, that it used to be no uncommon thing to have an article inserted in their laws, that no exhibitor was to call the judges decision in question, without previously depositing a fine to a considerable amount. I say *used*, for I do not think such a law is *now* found to be requisite.

Liable to errors and oversights as all judges are, still, in the vast majority of cases, they were in a position to form a better estimate of the productions exhibited than the exhibitors themselves. Men, cool and clear-headed, we have found in plenty, who, at a glance, could tell the position each exhibitor would occupy, and even direct your attention to something so superior to their own in their neighbour's collection, but with young exhibitors this is the exception, and not the rule. We have all read the tale of the man driving his hog to market, and finding that every grog-shop he visited increased his hog in size, until it became a perfect mountain of pork. With much of the satirical, the tale conveys too true a picture of human nature when the mind is engrossed with one object. Young exhibitors, as a class, are apt to be too sanguine. They see beauties and perfections in their productions that other people fail to discover. I speak feelingly. Their enthusiasm is good, so long as it nerves to the surmounting of difficulties; but it becomes an evil when it conceals defects that every body else can see, and leads to fault-finding with judges, instead of looking for reasons nearer home. What a weight of irritated disappointment these poor judges must carry did they but know it. What an anxiety with committees to get judges that *could* give general satisfaction! How multiform the schemes of labelling the articles, so that the judge *must* give an unbiassed verdict! This last condition, a source of great trouble to the managing committee, and, necessary it may be, to please suspicious and crotchety people, is, practically, of no use whatever. Get honourable men for judges, and you may place, at once, each man's name on his collection. The decision will be just the same. Complaints of decision are now rare at the Metropolitan exhibitions, and statements of collusion are now unheard of, although every man's name is placed conspicuously against his plants. True, the exhibitors *there* are generally so used to the results, and take the whole matter so calmly, that a keen observer would hardly know whether they were satisfied or not. It certainly redounds to the honour of all concerned, when, by the very *openness* of their conduct, suspicion is disarmed. With these preliminaries, let us glance at a few means for warding off unpleasant disappointments.

1st. *Make up your mind what you are to compete for*—whether quality—fitness for a specified end—or cultural skill. Some societies specify these matters in their schedules; and did it not tend to confusion, it would be better if all would do so. Exhibitors, variously situated, would not then clash with each other. First, as respects quality in flowers. All florists' flowers are now judged

by a pretty well generally recognised standard, not that we consider the circular outline contains the perfection of beauty. Were all flowers perfectly circular, they would become hideous from their very monotony. Even now, we are sacrificing brilliancy of colour to texture and outline; whilst laws are recognised, however, they must be acted on. If no class for culture exists, the finest specimen of cultivation, if deficient in florist properties, has little chance with what is a superior article, though shewing less skill in the grower. Judges here have often a very difficult duty to perform. It is safest for the exhibitor to shew the best kinds of florists' flowers well grown; and if he cannot obtain these, to reserve his skill to objects which the florist has not yet succeeded in taking under his peculiar care. Then, secondly, plants must be shown for what they *are*, not for what they have been, or what they may become. A plant past its best will succumb to a plant not quite come to its best; both will yield to a plant about equal in cultural skill, but just in its prime. Thirdly, *size* must not be idolised; too much importance has been given to this. Compact, healthy growth, abundance of fine flowers, and little shouldering from stakes perceptible, will always beat a straggling plant, though a waggon might be required to carry it.

2ndly. *Fitness for a defined end.*—Thus, in vegetables, without any rules to guide us, we should judge somewhat differently the productions of a cottager and those of a gentleman's gardener. *Size* would form a prime ingredient in the first case; quality the first consideration in the second. Then, as respects fruit; some societies have two classes, divided into weight and flavour. Here the man of fine taste, and superior cultural skill, can each compete without crossing each other. Without such definition, and with judges who look upon flavour as the first essential, what would be the use of showing the finest specimen of a plum against a little well-ripened greengage. Fitness for the table is generally the criterion for fruit. Without specific notice, this often interferes with cultural excellence. Over ripeness, or not being ripe enough, bruised in the packing, or the bloom rubbed off, or the hole of a slug or worm, will run the risk of placing them below inferior specimens as respects culture. Now for myself, I should be loath to pass a very fine dish of peaches with a bruise or two from a long journey, and put unmutilated, but inferior specimens above them; but such things are often done. The finest plate of Kean's strawberry I have ever yet seen was passed over by the judges. The exhibitor quietly said to one of the judges, whilst looking at them, "I suppose you were afraid of them." "Oh no," said he, and taking up a huge one, and pointing to a slug hole on the under side, he as coolly said, "If you can send holed fruit to your employers table, I can't do it to mine." Now I say nothing of such a decision; you will form your own judgment; but if cultural excellence had entered into the decision it would have been different. Most gardeners would contend with me, that, unless in specified objects and novelties, cultural skill should hold no *secondary* place.

3rdly, and finally at present. *Be more careful of the quality than the quantity you exhibit.* Be neither over-sanguine, nor over-covetous. Every bad specimen, among either fruit or flowers, detracts from the value of good ones in the collection. A grasp after all may leave you with nothing, when, by moderating your desires, you would have been successful. This is a rock on which hundreds founder; get disappointed, and exhibit no more. Thus, a man has three kinds of fruit, all very good; he must exhibit in a collection of six, trusting to the superior to overcome the blighting effects of the three inferior dishes. Nay, he may be so grasping as to exhibit likewise several single dishes, but not so good as the best in his collection. His three inferior dishes weigh down his three good ones to zero. He is beat in the single dishes; and, instead of having several principal prizes, he goes away grumbling that he has little or nothing. He has himself entirely to blame. And so with plants; the honour of showing a splendid single specimen is greater than that of exhibiting a very inferior six. The taking a first prize for six is greater honour than being ever so far down for a twelve. Every inferior plant detracts from the value of a good one. It is no disgrace not to exhibit at all; it is no dishonour to exhibit *sparingly*, and only what is good. There is no honour in mere size and quantity, some of which will scarcely bear inspection. Besides, people judge from what they see, and not from what you may have at home. Articles, however few, but good, will ever give honour to the gardener. I know that many have little means, and little command of labour for preparing for exhibitions. Let them not exhibit at all, or exhibit sparingly. The success of an exhibition depends upon its quality, not the quantity of the articles.

"O, but," say some of our committee men, and exhibitors, too, "we should have so few things that the people would not come to look at them. They like masses and quantity, and without it our rooms and fetes would soon be desolate." I reply, humour the wish for great display, by all means—quantity is so far always attractive; but *confine your good things to exhibition tables*, and have other tables filled with objects not for *competition*. Bring them, if you will, in waggon-loads; if your funds will allow it, give extra prizes in abundance to these; and, at all events, do not scruple giving plenty of *commendations* and *honourable mentions*—they cost nothing in hard cash; they please the bringers; the public is satisfied; the society will flourish; and all concerned meet in satisfaction and harmony. R. Fish.

FLORISTS' FLOWERS AT THE REGENT'S PARK SHOW.

The 9th of June, 1852, will not be easily forgotten by the visitors and exhibitors at the Horticultural Fête, in the Royal Botanic Society's Gardens, Regent's Park, on that day. As early as five o'clock in the morning, and until the closing of the show, the rain fell incessantly, and most of the time very heavily, thus disappointing thousands who would otherwise have paid their tribute of admiration to the beauties of Flora and Pomona, spread with no niggard hand for their gratification. Yet, notwithstanding the "pelting of the pitiless showers," several hundreds of the more ardent lovers of the produce of "trim gardens" paid their devoirs to the beautiful objects placed in the tents, congratulating themselves with the somewhat selfish feeling, that they had a better opportunity of seeing the flowers and fruits than they would had it been as fine a day as it was a foul one.

Florists' flowers were, in most instances, in fine condition, the exception being most seen in the *Rose* tent. Had we not seen the May exhibition, we might have thought the roses excellent, but at this show they were decidedly at a discount, though there were some half-dozen in the whole lot that were quite up to the point of excellence.

Pelargoniums, as might have been expected, were of first-rate excellence, indeed, superior to the May shows. The following are noted as being either fresh kinds, or in better condition than on former occasions:—*Ajax*, upper petals, purple-crimson, edged with scarlet; lower petals, rich purple-rose; form good, and substance excellent. *Conspicuum*, a richly dark-coloured flower, of good properties. Upper petals, very dark crimson, edged with fiery scarlet; lower petals, a pleasing light rose, with a crimson spot in the centre; eye, a bluish-

white; form and substance good. *Emily*, very similar to the last, with larger flowers, and the colours in every part of a lighter hue. *Rosamond:* this beautiful variety was never before seen in such perfection; it is a real good standing kind; colours, light rose, and large white centre. *Magnificent:* the prevailing colour of this showy variety is a glowing crimson, approaching to scarlet, with dark crimson spots; form and substance good. *Alonzo:* rather an old variety, but a very good one; upper petals, a rich dark purple, with a very narrow edging of scarlet; edges very smooth; lower petals, dark rose; form and substance first-rate. *Ocellatum*, a name meaning "*eyed*," and a good name it is, for every petal has, as it were, a dark eye. It has more the appearance of a fancy geranium, and Mr. Beaton says it is one to all intents and purposes; most likely he will claim it as one: let it be whichever it will it is a beautiful kind, and desirable for any body, or for any purpose where a mixture of gay colours is required. *Gulielma*, we never remember to have seen in better trim, but Rosamond beats it hollow, though there is a resemblance in colour, form, and substance. The plants of all the collections were most excellent; no sticks were visible, and the pots scarcely so. We must except one lot, which were too well grown; that is, the foliage was so large that the flowers were almost smothered by them; they had evidently had too rich stimulants applied, thus disappointing the grower of a fine bloom. There is a medium in all things, and he who hits the happy one of neither under nor over feeding his plants is the clever cultivator, and will stand No. 1 on the prize card.

Mr. Hoyle exhibited in one stand twelve quite new varieties. Though the plants were in small pots, and the foliage but middling, the flowers were all first-rate as far as culture went. The best of these will stand, 1. *Zaria.* In the whole race of show Pelargoniums, there is not one that approaches, in form and substance, so near perfection as this charming variety. Even our somewhat sceptical friend, Mr. Beaton, was obliged to confess that there was great merit in this variety in the above properties, independent of his hobby — bright glaring colour. Even in the colour it was not behind; the ground was a pleasing buff-white, the upper petals largely clouded with chocolate, and the lower small spots of the same. 2. *Astrea;* form and substance good; colour, upper petals dark, edged with white, lower petals, rose; eye or centre, large and pure white. 3. *Leonora*, something like Astrea, with a better outline, and lower petals of a paler rose; trusses not large. 4. *Dion;* dark upper petals, broadly edged with scarlet; form excellent. 5. *Kuna*, dark upper petals, edged with fiery red; lower petals, pink, with a dark blotch on each; form good; a showy variety. 6. *Diadem*, a fine thing in the way of Rosamond, with larger flowers and better defined colours. There was a showy freely-blooming one, called *Butterfly*, which will be useful as an ornament to an amateur's greenhouse stage. The whole formed a group of seedlings quite a wonder as one man's raising.

In new seedlings, shown in fewer numbers, Mr. Foster had several plants of his *Optimum*, which was shown last year, and is a fine dark variety, but the colours run too much into each other. Whether high cultivation will correct that fault remains to be proved. Mr. Foster's *Queen of May* is a decided improvement upon Optimum by the same raiser, and when seen in a large plant will no doubt be effective as a show flower.

Hoyles's *Albina*, though shown as belonging to this class, is too flimsy and starry. It would, like Ocellatum, be more at home amongst the fancy varieties.

Pelargoniums—Fancy Varieties.—Gaines's *Hero of Surrey* still holds the first rank amongst these lady-like varieties; the next best being Ambrose's *Gaiety*. These stood together in one collection, and were deservedly admired. There was one named *Nourmajed* (Hill's) that was truly showy, and remarkably brilliant in colours. The flowers were larger than ordinary, and had the form been good it would have been a first-rate variety, but that was deficient; the edges being all almost as much curled as Cattleya crispa; still it is worth growing for its fine rosy colours and large size both of flower and truss. Ayre's *Caliban* and *Formossissima* well sustained their fame as fancy varieties. Our readers will remember that they obtained several certificates of merit last year. Amongst a crowd of seedlings there was only one of superior merit, and it had only one bloom open; and as the rule is not to give a prize to only one, the judges were obliged to pass it over at present; when exhibited again, it will no doubt receive an award. Form excellent; upper petal dark, large white eye; lower petals had a distinct vein of crimson running in a line through them all; outer edge, white. It was named *Aveiron.*

Pansies were shown in pans of cut blooms, and did credit to the growers. The best were *Nonpareil, Blue-eyed Maid, Smolensko, Falkirk Hero, Madonna, Lady Cartwright, Beauty of Haverhill, King, Pandora, Flower of the Day, Ibrahim Pacha*, and *Sambo.* There was a seedling named Turner's *Nonsuch*, a bright yellow, with a well-defined dark spot; form good; and another named Bragg's *Sir Harry Smith*, yellow ground, dark eye, and rich purple blotch, very distinct, and of a good form. In this class of flowers there is a decided advance.

That beautiful flower the Ranunculus was shown in fine order. We noted as the best, *Duke of Devonshire, Pucella, Princess le Galitzin*, Nixon's *Queen, Eliza, Venus, Orange Banksian, Violet Fonce*, and *Miss H. More.* There was one stand of Pinks, which might have been better had the season allowed. The following were tolerable—Brinkler's *Queen*, Holmes's *Coronation*, Wilmer's *Laura, Independent, Morning Star*, and Wilmer's *Surplus.* There was also a pan of beautiful double Anemones. These flowers are so charming, and have such splendid colours, that it is wonderful they are not more grown; they were not named.

Fuchsias were large enough, but the season was too early for them; they were generally deficient in bloom, and had evidently been grown in heat. *Kossuth* was the finest in dark varieties, and *Elizabeth* in the light ones. Why do not the competitors grow better varieties; there are plenty in the nurseries? Bank's *Glory* was shown again as a seedling, and proves to be a considerable improvement; it deservedly obtained a prize.

Calceolarias.—Several collections were present in fair condition. There is an improvement in this favourite flower. The best were *Fascination*, a smooth, round flower; colour, orange-ground, shaded and streaked with yellow. *Remarkable*, a seedling, obtained a certificate amongst a host of inferior varieties; ground-colour, shaded rose, spotted and shaded with yellow; shape excellent. Of old varieties, *Grenadier*, dark; *Marian*, light; *Prima Donna*, dark; *Earl of Rosslyn*, light; *Triumph*, dark; *Nil desperandum*, dark; all more or less spotted with yellow and crimson.

There was a seedling calceolaria, with bright, rich crimson, large flower; a self, very showy, and attractive, but sadly deficient in form; yet, as an ornamental plant, possessing great merit. It is to be hoped the owner will propagate it largely. It will make an excellent breeder.

Mr. Griffin, of Uxbridge, exhibited some seedling Rhododendrons of considerable merit. One named *R. compactum*, will be useful to grow in pots, and for forcing, flowering as it does on plants not a foot high. He had a good yellow one, named *Prince of Orange*, and another named *Captivation*, which was somewhat paler, but had more dark spots on the upper petal. There were some seedling Bedding Geraniums of merit, especially one from Mr. Kinghorn, of Twickenham, named *Attraction.* Our readers will learn of these from Mr. Beaton; they are exactly in his way, but we must say that Attraction

is a beautiful and novel variegated geranium. There are three distinct and well-defined colours on each leaf, green as a ground colour, edged with white, and a distinct ring or horse-shoe between them; colour of the flower, a pleasing salmon red. T. Appleby.

CULTURE OF ROSES IN POTS FOR EXHIBITION.

(*Continued from page* 179.)

Conveying to the place of Exhibition.—The cultivator having successfully (by following the instructions we have given as near as circumstances would allow) brought his plants into a fine blooming condition, the next consideration is how he is to convey them to the exhibition safely. This can be done in the mode Messrs. Lane, Paul, Francis, and others have proved. They bring their splendid plants 15 or 20 miles in such fine condition that they look as if they had not been brought as many hundred yards. The first thing to do is to have in readiness a spring van, or vans, according to the number required, sufficiently capacious and lofty within the cover, to hold the plants without crowding or touching the sides or the roof. To keep the pots steady in going up or down a hill there should be some kind of package employed to put between the pots. A material that, perhaps, can be the most easily procured is coal-ashes, neither wet nor dry; for if it be wet, it would allow the pots to slip about; and if dry, the dust would rise up with the shaking of the van and spoil the flowers. It should be about six or eight inches thick, and the pots should be plunged in it close down to the bottom, and the ashes packed firmly around and between each. Some persons use decayed tanners' bark, and others damp sawdust, whilst some thrust in short litter between the pots. Any of these will answer the purpose tolerably well, but we give the palm to the coal ashes, provided they are in proper condition.

Selecting the Plants.—This requires considerable judgment. The great point is to choose such as are only expanding the greatest number of bloom. If they are fully opened, there is great danger before the day is over that the blooms so forward will shed their flowers. The state of the weather will, it is true, greatly influence their power of retaining the bloom. If the day previous is hot and sultry, fully opened flowers are almost sure to be spoiled, but if it be cloudy and cool, the more advanced plants might be ventured with.

Preparing the Plants.—Previously to putting them into the van, let every rose, or bunch of roses, be tied firmly to some support, either to sticks, to be removed before placing them on the stage, or to some strong neighbouring branch. Care must be taken that the blooms are so distributed and fastened that they do not rub against each other, the foliage, or the branches, nor indeed against anything, because the least friction during even a short journey may injure the blooms sufficiently to lose the prize. Then, when they are as well secured as the ingenuity of the cultivator can devise, place them in the van, being careful again that they be so placed that the flowers do not touch each other, or anything else. Pack each pot firmly, so that it is not possible, with moderate care, to slip backwards, forwards, or sideways. Also, if there be room, take one, two, or three plants more than are required, for fear of accidents, and then all is ready for starting. Whatever the length of the journey may be, start soon enough to arrive there, without hurrying, full three hours before the time for the censors to enter the tents. This will allow time to dress the plants, remove useless sticks, clean the pots, and give water, if needful, to carry them through the day fresh and blooming. Not the least important point is to have a steady, careful driver, one that thinks on what he is about, and will, during all the way, constantly remember his charge; will keep a look-out every moment for stones and deep ruts, and carefully drive so as to avoid them. Many a prize has been lost by starting too late; driving fast and heedlessly, and thus shaking the plants, and scattering the best and finest blooms before arriving at the journey's end. The exhibitor himself, if he cannot depend entirely and fully upon his driver and assistants, should always travel with his choice plants that have cost him so much care and expense to bring them into a fit state to compete with.

Staging.—Supposing they have arrived in the best condition, at the proper time, the next point to attend to is to place them to the best advantage on the stage; and here, again, the benefit of early stirring will be found advantageous. The exhibitor can then place them in the best situation; whereas, if the plants arrived late, the best position will perhaps be occupied, and he will have to place them in the worst place, if there even is room for them at all; but by being in the field early, he can secure a good place at once, and have leisure to arrange them, as well as dress and set them off to the best advantage. Let the pots be clean wiped, the earth on the surface in the pots stirred, every decayed leaf, or overblown or rubbed flower removed, and the perfect ones so arranged that every one will tell, and, as a whole, have the best effect. The taller plants place at the back, and the more dwarf ones in front, and do not allow them to be crowded, but let every plant occupy a position. View them over at different distances with the eye of a censor; and when you have placed them so as to have the best appearance, see that your collection is properly entered in the clerk's book, and ticketed according to the rules laid down in the schedule. You having then done all that you can—leave them to the mercy of the censors, and go and refresh yourself with a good breakfast, not forgetting your assistants, your driver, and your horses. We have not space for the exhibiting *cut roses*, and so must defer our remarks upon them to the next opportunity. T. Appleby.

KITCHEN-GARDEN WALKS—EDGINGS.

As we last week urged the propriety of using hard stones rather freely in forming kitchen-garden walks, we have little more to add to the opinions then given, except it be that in certain special cases, where expense is no object, a firm, smooth, solid walk may be made at once, by floating the surface of it with liquid mortar after the stones have been carefully levelled and pressed down. This, of course, is a concrete walk in its literal sense; and in all cases where it is advisable to form a walk or road in a short time, regardless of cost, this method may with advantage be adopted; scattering a little gravel on at top will give it the necessary colour. But in a general way walks may be made pretty firm and good by a less expensive process, by having recourse to that all-important agent, "time," to assist in completing the work, and good hard serviceable walks may be made without concreting.

We now take leave of walks as far as regards their formation, and address ourselves to the *Edgings* most suitable for a kitchen-garden; and whatever our floral friends may say to the contrary, we believe kitchen-gardens in general present a greater variety of such margins than do the parterres of the most enthusiastic admirer of Flora, with the exception of here and there a flower-garden edged with *Stone kerbing*, or something in imitation of it; the greater portion consist only of *Box*, or, it may be, a *Grass verge*. It may be true that nothing can exceed these things for beauty and utility, and their presence in a kitchen-garden, when well kept, is always welcome. Nevertheless, box will not grow in all places,

and dressed stone-kerbing is often thought too expensive for all purposes, and as *Strawberries*, as an edging, are in too exposed a place to receive any benefit from their produce, while *Thyme*, *Chamomile*, and *Chives*, are too clumsy and unsightly to be tolerated, recourse must be had to some other kind of edging.

It often happens where box will not thrive, *Gentianella* is as untractable, otherwise a good marginal outline of the latter is, we think, preferable to box. *Thrift* will do on dry situations, only it requires replanting once every two years, if not yearly, as we have done some; only we beg to observe that when it, or anything else that way, is replanted yearly, their roots ought to be laid into the border, and not into the walk, as is the case generally with box, &c. *Double Daisies* have gone much out of fashion lately, unless the taste for them be revived in those Belgian varieties we have been told so much about; but, we must confess, we failed to discover anything novel or striking amongst some shown to us as belonging to that class, so that as far as edgings are concerned, the old quilled red and white, and the rose-leaved of the same colours, mixed as well as separately, present as good a selection as those imported from our enterprising neighbours; but we are not admirers of daisy edging for a garden of any extent. *Box* is the only live edging we do like in a kitchen-garden; its sturdiness enabling it to endure encroaching crops better than others do; that where box, and its compeer *Gentianella*, will not thrive, and *Thrift* be objected to, we see no alternative but having recourse to a permanent edging of some undecaying material.

We long sought for some cheap, durable, and efficient article as an edging to walks underneath trees, and where no live edging would grow, and, like others similarly placed, have tried flints, or pebbles, or rough stones, partly sunk in the earth, but somehow or other, they too often got out of place, by the broom catching them; besides, flints and pebbles, however pretty at first, soon get discoloured, and as dressed stone kerbing cannot always be had, we at last had recourse to an article the most common and cheap of any, yet at the same time, neat and durable, and which is within the reach of all, it being, in fact, only *common bricks!* Condemn us not, gentle reader. The mode we lay them down, is, we believe, not generally known, at least we have never seen it elsewhere; it is neither edge nor end up, but is so laid down, that its edge presents an angle of 45° to the walk-side, and of course its flat surface will present the same on the border-side; being laid, in fact, with its angle-edge up. Some care is required to lay the bricks accurately, but a little practice will enable any handy workman to lay them as well as a mechanic, and often better, where a curve instead of a straight line is to be done, and when nicely finished, many a looker-on would be calling it a prepared kerbing, instead of only common brick, as it should be let into the ground so low as to hide the under edge of the brick on the walk-side. A little ramming soon tightens it, so that no ordinary operation is likely to loosen it, and it forms an excellent barrier for the broom to rub against.

Now, though we have not ourselves tried the above for edging to walks in a kitchen-garden, we have ample experience of its utility and appearance in the darkened shrubbery, that we strongly advise those of our readers who are averse to box to give it a trial.

We have seen garden-walks edged all round with *wooden planks*, laid edgeways up, and fastened to stakes, &c., like a continuous line of railway; but assuredly bricks form a more enduring material than timber, and we think look better; another advantage they have, even over live edgings, they do not harbour slugs, and other vermin, and that is no inconsiderable object, where the welfare of tender plants is at stake, and the expense of doing a given length of walk may be calculated on to a sixpence, by any one who knows the price of bricks, which latterly have been very reasonable, except so far as an increased demand has kept up the price.

It easily will be seen that one of the principal recommendations to an edging as above, is that it requires no after trimming, clipping, or relaying—three operations which too often disturb the walk, when box or other plants are used, are here entirely avoided, and their operations and their consequences, are evils of greater amount than is often thought of; and unless some unskilful hand loosens or alters the bricks in digging the border, there is every probability of their remaining in good order for half a century, supposing the bricks to be good, and serious accidents guarded against.

Sundries.—Sow more *Turnips*, choosing rather poor ground, but not shaded by trees; the richly-manured ground of kitchen gardens rarely produce good sweet turnips, except those drawn early in the season: in such a place they become gross and spongy. It is better, therefore, to keep the above in mind when the time comes to sow the principal winter crop; and if the garden does not present a suitable plot, it is better to make friends with the farm bailiff, who may have a spare corner better adapted to them. Sow a little of the *Green* and *White curled Endive;* and, of course, *Lettuce*, of the best Cabbage and Cos kinds. *Radishes* can only now be sown in moist places, as on a north border. *French beans* may now be sown for a late crop, and the same may be said of *Scarlet Runners;* attend to the staking of those now wanting it, and the same may be said of *Peas*, the latest crop of which may be sown as late as the beginning of July in the South of England. Attend to all progressing crops, not forgetting to thin those requiring it. Hoe, stir, and work the ground amongst all crops in rows, and take advantage of fine weather to plant out the various members of the *Cabbage-worts* which are now ready for that operation. On the whole, we prefer dull dry weather for that duty: as when moist and showery, the slugs commit sad havoc amongst them, while a little flagging is soon overcome. A little more seed of the *Walcheren Brocoli* may be sown on a favourable border, but if there be a crop just showing itself, sufficient plants may there be had to furnish all that it is prudent to plant at so advanced a season as it will be when they are ready. Sow a few *Carrots*, to draw young in autumn; and the same may be said of *Onions*, when such are wanted for salads, or such purposes. J. Robson.

ALLOTMENT FARMING.—July.

We are not aware how the rest of the country has fared of late as to weather, but here (Cheshire) after one of the driest springs on record, we have had the most abundant and genial rains. The ground is at last fairly moistened through, and that too by rains almost as soft as dew. This is, indeed, a boon; for we have known dashing storms so saturate and choke the soil, that drought would have been preferable. Crops in general are exceedingly luxuriant; *potatoes* particularly so; we have never before seen the early kinds so luxuriant as in this neighbourhood, although we hear that in many parts of Lancashire they are seriously injured by a frost, which occurred so late as the last week in May. It becomes all parties, however, to be grateful to God in a high degree for such continued blessings, and the poor especially; they suffer not by famine in these plentiful times as their forefathers did. The consideration of this ought to lead to increased exertion, not only for their own families' sakes, but as a duty they owe their country; remembering Nelson's signal, "England expects every man to do his duty."

And now let us examine the position of allotments at the very beginning of the month:—

1. Is your ground all cropped?
2. Have you any blanks in existing crops?

3. Are you prepared with successional crops?
4. Have you plenty of winter greens?
5. Have you secured a seed-bed of swedes?
6. Is your allotment free from weeds?
7. Is it fit for your landlord to look over?
8. Do you keep a constant eye on manures?

Our readers must excuse our catechising, but the above are very wholesome questions to put at this period.

If your ground is not all cropped, pray, then, lose not a day in either planting, sowing, or determining. As usual, we suggest root-crops as the first consideration, and winter greens as the second. This, however, depends on the position of the cultivator, whether he keeps a cow or a pig. The root-crops are always valuable to either, but the greens will certainly accomplish what the roots cannot; they will furnish the family table daily as a help to potatoes, and yield much garbage afterwards for animals. The second point, "blanks," refers to crops which have missed in places, and, as before observed, swedes or cabbage-plants, of a dwarf and compact kind, are the most eligible at this period. Not one hour should be lost in making such gaps good, especially if the ground be moist. The cultivator should, however, make a point of thoroughly clearing such plots of weeds first, or the transplanted things will be in danger of choking if the hoe be not introduced before they get a start. As for blanks in crops, which will come off the ground in a few weeks, such had better not be filled; they would only tend to fetter the hands as to succeeding crops. Successional crops have, we trust, been planned, and provided from the commencement of the season; if not, let such be considered immediately.

Winter Greens.—As we have constantly urged, every cottager who holds a plot of ground should provide a nice bed of these. We pity the man who would rather depend on his neighbour than sow a bed, when all the seeds requisite may be purchased for less than a couple of shillings. It is shameful neglect to go about, at the "eleventh hour," trying to beg a few score of plants. Cabbages we have before recommended as very fitting for gaps in crops of potatoes, mangold, parsnips, or even swedes. *Green kale* being of taller and coarser growth, is fitter for planting in alleys, after row or bed-culture has gone through a thorough cleansing process. This green is highly to be recommended, as being the hardiest we have; no winter in Britain ever injures this most valuable vegetable. Planted in the beginning of July, the heads may be in constant cut from the end of November until March, or even April, and it will all this time yield sprouts abundantly. These sprouts we consider the finest-flavoured green we possess; superior to all the other cabbage worts, combining, with the best cabbage-flavour, a slight amount of that taste so much admired in the turnip top. The *Brussels sprouts* is another capital thing, and may be planted in similar situations to the kale, with which it is equally hardy. It is not quite so productive in point of bulk as the kale, but as it may be planted much thicker, it thus becomes nearly a match for it. *Savoys* are famous autumn greens, yielding a considerable bulk of food. A good bouncing savoy of six pounds is a good match to a lump of fat bacon, as a Sunday's dinner to the cottager with half a score children. Our gentry, who have their meats cooked so distinct, have no conception of the richness and mellowness of a savoy thus cooked. They are not by any means hardy; some winters totally destroy them, and we recommend a few as a November and December dish, to decoy the cottager's wife from the real winter and spring greens. The *Thousand-headed cabbage* is one of the best things we know, where a cow is kept; its only fault being that it requires a deal of room. Its peculiar character consists in its great bulk, and its excitable nature. It will grow freely, and produce young sprouts in the very coldest weather, producing a great bulk of early spring food. It must be a capital thing for the lambing season for those who keep sheep. *Brocoli* is more of a delicacy than a profit, unless grown for sale. The fact is, they are too tender to be allowed to supersede green kale and the other hardy cabbage worts. If the cottager will plant some, we advise Capes and Walcherens for October and November; the sprouting and Snow's winter white for very early spring; and the Protecting, Wilcove, &c., for April and May.

Swedes in Seed-bed, if getting rather tall or drawn, may have their tops cut with a scythe, passing it lightly over them, and removing just the points; this stiffens them much. We have before named that swedes transplant admirably when the bulb is as large as a duck's egg; we like this plant best, as enduring drought better.

Roots in General.—All such things ought to have been duly singled out, if not placed at final distances, weeds extirpated, and the hoe or fork well plied between the rows. Persist in high culture and cleanliness, feeling assured that you will be well repaid both by the bulk of the crop and the condition of the land for succeeding crops; added to which it is well to possess the confidence and approval of the owner of the soil. Let all transplanting processes be well carried out, not forgetting to puddle the roots, and attend to the other minutiæ in former allotment papers. Keep a sharp eye on carrot beds, and such crops as are liable to the devastation of snails and slugs. Use the mixtures so often recommended in these papers. Fine cinder-ashes, without the mere dust, can hardly be strewn too often amongst such crops; the slugs cannot bear to travel over such material. Let early *Peas* be drawn from the ground as soon as the crop ceases to be profitable; as for keeping them for seed, it is nonsense; the ground will pay much better for a succession crop.

Broad Beans should be well "soiled up" the beginning of the month for fear of storms, and let the tops be pinched as soon as a good bloom is out; nothing is gained by encouraging too great a length; it keeps them too long on the ground. If the fly attacks, pinch the tops speedily if much bloom is out; this will stay the fly. See that *Scarlet Runners* are well staked, or conducted up their stakes or strings, and water well when dry. *Onions* must be watched for the maggot; if it commence, apply soap-suds, sprinkling them with a waterpot-rose, or a syringe; we have known this avert an attack or mitigate it much. It should, however, be done before the maggots are seen. It is intended to drive the fly which lays the eggs producing the maggots. Of course the onions have received their final thinning by this time; ours are finished; every weed pulled out, and the alleys all dug and planted with *Savoys*. The beds being by our practice, heretofore explained, a foot above the alleys, the savoys shoulder below the level of the onions, and do not molest them. Now these onions will, we doubt not, be off the beds by the middle of September, perhaps earlier; the beds will then be slightly manured, dug only six inches deep, and a crop of cabbages, from a Midsummer sowing, immediately planted. These will be what London market-gardeners term *Coleworts*, and we shall plant them only ten inches apart. This will seem sharp practice to those who do not know the value of land; but, for our part, we cannot bear to see a yard wasted, knowing that the capabilities of the soil in general have never been fairly estimated. If our allotment friends had as frequent calls as we have for a constant succession of young vegetables, they would soon discover the impropriety of suffering ground to lay idle for a moment, either from want of interest or want of contrivance.

Rhubarb.—Be sure to pluck every blossom shoot away except the favourite one for seed. Do not continue plucking it in a reckless way; the gooseberries should ere this have taken its place in the dumpling, and they will in their turn be ousted by the apples.

Lettuce.—Sowings may be commenced fortnightly until the early part of August. We prefer the Bath or Ady's Cos.

Spinach.—If required, sow a bed or row about the 20th of July; this will yield bountifully until nearly Christmas.

Potatoes for Seed.—The Ash-leaved Kidneys, and other very early kinds, will be ripening by the beginning of August in some places; and we do think it good practice to take them up just before they are dead ripe. We remove them instantly to a floor in some north building, and strew them thinly over the floor; there they green sufficiently without sprouting. Such floors, however, should be very dry.

R. Errington.

THE APIARIAN'S CALENDAR.—July.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide.

Swarms.—Swarming has been earlier this year generally than is usual, and in some localities especially so. Some were as early as the 16th of May, and even in this neighbourhood, Bury St. Edmond's, there were several

before the 24th; but some of them, I am sorry to say, from cold, wet weather setting in at the time, and from the want of a little food being given to them, which, under such circumstances, should always be done, have perished, blighting at once the expectations of their owners of the large supply of honey which they hoped to gain from such early swarms. Other persons are disappointed in having swarms from stocks on which they had placed glasses, expecting them to be filled very speedily. This may have arisen, in some measure, from the weather (for in showery weather there is a great disposition in them to swarm), but principally for the want of a little nice management, for it is not simply placing a glass upon a stock that will prevent its swarming, but seeing, also, that the bees take to it, which they may be made to do by placing a few pieces of guide-comb neatly in the glass, and then, long before the glass is filled, placing a small hive or box between the partially-filled glass and the stock hive, and care must be taken that this latter receptacle is not too deep. It is better not to exceed four inches; its breadth is immaterial; raising the glass a greater distance from the stock hive gives the bees a dislike to it, they forsake it, and swarming is frequently the consequence.

Raising a Stock.—If I had a glass filling well with honey, and a disposition for swarming appeared, I should not hesitate in adopting "Miners" plan of raising the stock a quarter-of-an-inch from the floor-board all round, by three or four wedges, for a few days, until a change of weather rendered its continuance unnecessary.

Transferring Glasses.—Those persons whose bees have swarmed, and left a glass partially filled with honey, would do well to remove the glass from the stock hive and place it upon the swarm, where it will, should the weather be favourable, very soon be filled; but it should not be placed upon the swarm until fourteen or twenty days after the swarm has been hived, for if put on at the time of hiving the queen will go into it, and fill the unoccupied combs with brood, which will greatly injure the appearance as well as the quality of the honey.

COCHIN CHINA FOWLS.

I am rather tenacious of committing to writing what may appear in public, but I have been so much interested with the remarks and communications in The Cottage Gardener, on the subject of poultry, that I cannot refrain from giving you my experience in the matter. 1st. I perfectly agree with you, that Cochin China fowls *are* more profitable than Spanish, so much so have *I* found it, that after a fair trial of almost every breed, the Spanish being the last, I have given them all up but the Cochin China's, and now keep nothing but them. I have this spring, up to the first of May, hatched 131 chickens (and the only casualties have been, one with the cramp, which I killed, and two or three trod to death by the hens, when very young), and disposed of a large number of eggs, all from six hens. My stock is composed, partly of Mr. Andrew's breed, and some very fine, heavy Shanghai hens, which I am crossing with Mr. A.'s cock. "Amateur," in your last part, states Andrews's breed to be *tender* and *small*. To the first I can answer I do not find them so; and to the second, I have now chickens hatched the first week in February, weighing 9lbs. per pair. I would also mention a fact, which to me is quite a new one; a pullet of the above hatching laid an egg yesterday, June 3rd, before she was four months old. I begin to think that *very* early hatching is very well for cockerels, but not so for pullets, as by their beginning to lay before they are fully developed, must retard their growth. Your opinion on this matter will be esteemed. (We think early spring hatching desirable. *Very* precocious pullets rarely occur.) I find many of my neighbours complaining of this season being a very bad one. I think the contrary, as I believe nothing so fatal to young chicken as damp, wet weather. They also complain of gapes, I do not know it in my little establishment, neither do I profess to know how to cure it, but contend that prevention is better than cure, which if you think worth while, I will communicate at some future time, having now written much more than intended.—A Subscriber. (By all means.)

HARDY PERENNIAL PLANTS.

No. 1.

PENTSTEMON GENTIANOIDES AND ITS VARIETIES.

The now prevailing system of flower-gardening, namely, that of filling the beds and borders of the flower-garden with plants entirely of one kind, or of one colour, has tended in a great measure (somewhat unjustly) to render those plants, commonly termed *hardy perennials*, comparatively unpopular, and in many cases where they are grown they are not found to receive the attention which they deserve; for although it must generally be acknowledged that, as a whole for general effect and display, they cannot be placed on an equality with those by which they have been superseded, yet there are many, under proper treatment and care, placed in a situation suited to the development of their floral beauties, which would be found to possess qualities which merit equal attention with more tender plants, and would be found to furnish as great an amount of satisfaction and pleasure. To direct to these the attention of the amateur, from time to time, will be the object of the writer of this and succeeding papers.

Every one at all acquainted with flowers, is well acquainted with the effect produced by a bed of the scarlet Pentstemon, *gentianoides coccinea*, in full bloom, or of a single specimen among others in the mixed borders; for all the varieties of gentianoides are well adapted for bedding purposes. The *situation* which suits them best should be open and well drained; the *soil* in which they delight is of a light loamy nature, neither of a sandy nor clayey tendency; the *propagation* of all the Pentstemons is of a very simple and easy nature, as cuttings of the young shoots readily strike root, and soon form flowering plants; they may also be easily raised from seeds, although they do not always come true, they possessing a sporting tendency; and to those who have time and opportunity, a rich harvest might easily be gained by hybridizing the various kinds together. Much has already been achieved by this process, and much remains still to be attained. The following is a list of the best and most distinct kinds, selected from above twenty acknowledged varieties.

P. gentianoides gigantea elegans, scarlet, two feet high; sent out in 1845; flowers very large; much superior to the old *coccinea*.

P. gentianoides splendens. This fine variety partakes both of the purple-crimson of the old *gentianoides*, and the scarlet of *coccinea*; two feet high; a fine variety.

P. gentianoides Morrisonii, somewhat similar in colour to splendens; very large; a fine variety.

P. gentianoides Mc Evanii, raised in 1847; of a light red colour, with white throat, and dark markings; the most compact growing kind of the gentianoides section; deserves extensive cultivation for bedding purposes.

P. gentianoides Skinnerii. This fine variety is but little known. It was raised in 1848, by Mr. Skinner, gardener to Mrs. Watson, of Rye, and sent out in 1849. It is of a bright scarlet colour, with a very large conspicuous pure white throat; very distinct.

P. gentianoides alba, white, but of rather straggling growth, but valuable on account of its colour.

P. gentianoides variabilis, Salter's. New; colour rose; throat white, changing in the autumn and under glass to a greenish-white, edged with cherry; very novel, good habit; height two feet. Joseph Henry Knight, *Battle*.

FEATHERS.

"Which is the heaviest, a pound of feathers, or a pound of lead?" is an old puzzle for boys and girls beginning to learn their *avoirdupois*. There can be no harm in making light of things whose very lightness constitutes their merit and their value. In most objects weight is synonymous with excellence: the chaff is blown to the winds, the grain remains, samples of which may be tested by weighing equal measures of one against the other. Gold is notoriously ponderous; and so ponderosity becomes, even in figurative speech, an expression for worth. Light characters are contrasted with men of weight; and the lives of most men, when tried in the balance by what they ought to be, kick

the beam, and are found wanting. But amongst bad things, heavy feathers are the worst. Worn-out stumps, thrown off just before moulting, will hardly fetch the price of so many sticks and chips: while precious is the impalpable substance of a mass of eider-down (which the French ludicrously call *edredon*), and still more so, the—not plumes, but—fragments of cloud, which the unsightly Marabou Crane yields for the adornment of our fair and wealthy dames.

But use before show is the wisest order of precedence; and a good feather-bed is a truly British comfort, of older date than many of our modern luxuries in the furniture department. Thus from the 1st vol. of Norfolk Archæology we learn, that in wills made prior to 1520, *beds* and chattels of all descriptions are detailed with a painful minuteness, shewing the great value of such things in those times. Among the extracts given, is this from the will of Margaret Grey, Little Walsingham, widow, 1515:—"I will Johan Grey, my doughter, have 1 federbedd, natt of the werst, as it standith; ij peyer of honeste shets, &c." Again, Thomas Harpley, of Garbeysthorpe, A.D. 1557, bequeaths "Item, to Richard Harpley my son, (evidently a favourite legatee), *my beste fether bedde*, a great hotche callyd an arke, my best brasse pott, my best brasse panne, the best table, &c. &c." An old notion is, that pigeon's feathers should not enter into the composition of beds, because they cause the person whose fate it is to expire thereon, *to die hard.*

Most Englishmen will not at first take kindly to any bed, except one made of feathers; and it must be confessed they are the very thing for our climate. But a short experience of the French piles of mattrasses, filled with wool, will shew that they, too, have their merits. The German plan of sleeping *under* what may be called a feather-bed of eider-down, is delicious, if you can lie quiet all night; but it is terrible to wake after your first sleep, shaking with cold, and to have to get out to replace your upper-bed. I remember to have had, years ago, in the south of Italy, many wholesome and refreshing nights' rest on beds filled with the husk-leaves of Indian corn. The dried husks were put into coarse canvass ticks, having two open slits towards each side, just where you would make the cut for the wing, if the *feather*-bed were a plump fowl, or in the region of the air openings on the front of a violin. When the bed was made, the *camariere* or *camariera* (for male bed-makers are more common there than female), just thrust his or her arms through the two slits, gave the contents of the husk-bag a thorough stir up, very like shaking a heap of shavings, and so replaced the sheets and coverlid. A bed of straw is spoken of in England as the extremity of misfortune; but while in the enjoyment of youth and daily exercise, I found a husk-bed in place of a feather-bed to be no hardship whatever. But Indian corn will never thrive here, while geese, ducks, and chickens are an ancient staple. In place, therefore, of importing husks for beds, it will be as well to warn country housekeepers against all waste of feathers, and to remind them that the feather-bag, like the money-box, may become the accumulated treasure formed by daily savings.

The usual method in preparing feathers for the purpose of stuffing beds, is to separate the smaller from the quill feathers into different thick linen bags. They are then kept in a dry place; and where there is an opportunity, the bags should be placed in a *brick*-oven after it has cooled sufficiently not to singe the feathers. This must be repeated for several weeks, in order to prevent their acquiring any unpleasant smell. When well dried, they are put into a large tub, close to which another tub is placed to pick them into. Those that have quills, should be clipped off with scissors; the smaller ones also require to have the nibs cut out. Goose feathers are by far the best for beds, but ducks' answer equally well for bolsters and pillows. Turkeys' and chickens' feathers, when dressed in the same manner, will make good *common* or second-rate beds.

A full-sized bordered bed requires 56 lbs. of feathers; a bolster to match 10 lbs.; and a pair of pillows to the same 8 lbs. The tick should be prepared by rubbing the inside all over with either bees-wax or *hard* brown soap; the latter substance is preferable. It is desirable that beds should be emptied every two or three years upon a clean boarded floor, and the feathers gently beaten with a small stick. They are then put into a large agricultural sieve, and rubbed lightly between the hands, till the dust is all removed, when they may be returned to the tick again. The feathers of wild-fowl, *i. e.*, shot birds, are not commonly used for beds, but do exceedingly well for cushions, and such like. Poor Richard, were he the writer, would here remind you that "As you make your bed, so you must lie."

From feathers to lie upon, we might skip to feathers to eat; for it is a strange fact that feathers *are* eaten, and that by birds themselves. The creatures are occasionally seized with what might be called, in learned language, a *plumivorous* disease, which is very apt to become a chronic malady. At the Surrey Zoological Gardens there were, and may still be, some Macaws, which sat on their perches as naked as a fowl dressed for the spit, except on the portions of their person which they could not reach. I had often seen others of the parrot tribe in a partial state of nudity, but never any so thoroughly devoid of clothing as these. As fast as the stumps of new feathers appeared, out they stripped them. It was like the irresistible propensity which some unhappy maniacs feel to divest themselves of every article of dress. The keepers were ignorant of the exciting cause, and unable either to check or cure them. Various things are advised to be withheld or given to parrots in whom this tendency is feared, but nothing has been found effectual. Their close confinement would be sufficient to derange the nervous system of such active, excitable creatures; and a half-year's run in their native home, or what comes nearest to it, would be the most likely mode of giving their thoughts and their bills some other direction.

When fowls are affected with this strange appetite, it is not exercised upon themselves, but upon each other. A favourite tit-bit with Polish hens is the top-knot of their lord; and the second course, *i.e.*, the new crop of half-grown feathers, is more relished than the first. I was once introduced to the acquaintance of a Polish cock who had had his head-dress devoured *four times* by his ladies. He was at that time intended by his owner to be in solitary confinement, till his feathers should be once more reproduced; but the cottager's wife, in whose charge this Polish party were, pitying either the cavalier or his *dulcineas*, had allowed an experimental interview, and they were at it again. I suggested, as a last hope, that the cock should wear *a comfortable elastic nightcap*, well tied under his chin, till the rightful honours of his crown were restored to him.

The growth of feathers is a remarkable thing to watch, and can be best done in those birds where the process is rapid. The relation of the first down to the feather which succeeds it, is also curious to trace. "Have you ever noticed," writes a valued friend (*H. H.*), "during the moulting of fowls, that the young cases containing the feathers sometimes make their appearance *doubled down* at the ends? This was quite new to me this year, when I observed, on the heads of several half-grown Polish, that the incipient feathers were doubled back nearly a quarter-of-an-inch, and only pushed through the skin with a sharp struggle. It is a singular thing, that when hens, for it is not the case with the cocks, begin to moult early in the season, say about the beginning of August, they lay a certain number of eggs, and then *change* half their feathers again as soon as the end of October or the beginning of November. Now it appears so soon for the young feathers (especially those of the tail) to be cast off; and seems to us, who are ignorant of many of nature's doings, to be (as in Waterton's fact of the Mallard) useless and unnecessary. Had we the means of further investigation, we should probably find it not so."

[Mr. Yarrell has supplied an admirable paper on the growth of feathers to the *Trans. Zool. Soc.. Lond., vol. i., p.* 13. The transcription of a few sentences will shew the reader how much more there is in the subject than he may at first imagine.]

"A perfect feather presents many points of interest, if we consider its various parts, form, colour, strength, lightness, durability, and the peculiar manner in which the fibres of the web lock in with each other to afford continuity of surface. The accessory plume also requires to be noticed. This is usually a small downy tuft, which not only assumes a very different character in the feathers of different species, but is even very dissimilar in the feathers of different parts of the body of the same bird. The accessory plume is situated at the distal end of the quill, at the aperture through which the shaft and its lateral fibres have passed

out, and at the central point from which the two lines of the web begin to diverge. In the strong feathers peculiar to the wings and tail, it remains a small tuft of down, as at first-mentioned; but in the feathers of the body in the *Hawks*, *Grouse*, *Ducks*, *Gulls*, and some others, it is to be found of all sizes, augmented in some species to the full extent of the feather from which it emanates. The four species of *Struthious* birds afford remarkable instances of the variety that occurs in this accessory plume, even in subjects so closely allied; and the rich menagerie of the society enables me to speak of them from personal examination upon living specimens. In the *Ostrich* the feathers have no accessory plume. In the *Rhea* there is a tuft of down. In the *Emeu* the accessory plume is augmented to the full size of the principal shaft and web, and the feather of this bird is constantly and correctly represented as having two plumes on one quill. In the *Cassowary*, besides the double shafts and webs from a single quill, as in the *Emeu*, there is still an accessory plume, thus forming three distinct parts.

"In young birds the first feathers are preceded in their passage through the skin by filaments of down; but after the first plumage, at the regular period of moulting, each old feather is the pioneer of that which is to follow. If the shaft of a principal feather becomes broken off, the bird ejects the stump with difficulty; a certain portion of shaft appears to be necessary to enable the bird to get rid of the feather. Though perfectly able to throw off the old feather if entire, it seems unable to cast off the smaller but mutilated portion, and no new feather comes through the skin, the orifice being occupied.* Inflammation of the vessels in the part of the bird, and increased adhesion of the stump, are the consequences; and whether these portions of the feathers are allowed to remain, or too many of them drawn out at the same time, disease and some risk to life are the result; in the first instance from continued irritation, in the second, from too great and sudden a demand upon the vital powers of the animal. The natural moult proceeds by degrees, and the large quill-feathers of the wings and tail are generally shed by pairs.

"The state of the plumage in birds, like that of the productions of the cuticle in other animals, man not excepted, is in general a good criterion by which to judge of the health of the body."

This is so perfectly true, that a fowl-dealer or bird-merchant can tell, with half an eye, whether what is brought to his market be in or out of condition. Turkeys especially show, by the state of their coats, which will fatten fastest, without much need to handle them. While cases have occurred, in birds that have been starved to death, where the webs of the feathers had been absorbed before the sufferings of the creature came to an end.

But feathers ought to be looking up, now that their most dignified representatives in the realm are not a dormant symbol, but an actual reality. Long may they continue so. We *have* a Prince of Wales, who will insure to himself a nation's love, if he be but led to walk after the virtues of his sovereign. The memorial of Cressy, and the motto "*Ich Dien*," "I serve," aptly point to the duty of filial obedience, whose observance, whether in peasant or prince, is so graceful in the act and so happy in the consequence.—D.

PLANT CLUBS.

I HAVE been of late devising a scheme whereby myself and other cottage gardeners might manage to purchase such a class of plants as at present we are debarred from on account of price. I trust you will consider the elucidation of my scheme of sufficient interest as to secure your co-operation. I believe it is entirely original.

The plan is, to establish a club among amateurs. As there is nothing so explanatory as an example, I here present one. Suppose the object is to obtain pelargoniums; by selecting Turner's list (Slough) I find his most expensive plants range from one-guinea-and-a-half to half-a-guinea. Say the club shall consist of twelve members, each subscribing 10s. 6d. Then—

DR.	£	s.	d.	CR.	£	s.	d.
12 members, at 10s. 6d.	6	6	0	Ariadne (Foster's)	1	11	6
				Colonel of Buffs	1	11	6
				Shylock	1	11	6
				Mochamia	1	1	0
				Little Nell	0	10	6
	£6	6	0		£6	6	0

Thus five first-rate new plants are to be bought for £6 6s. In October they are to be distributed to five members, one to each. Each of the five members is to strike, during the following spring, four cuttings, and distribute them to four named members; and each of the second batch of four are to strike, by October following, two cuttings each, to distribute them to two other members. Thus—

Ariadne to be delivered in October, 1852, to No. 1, who is to send out four cuttings to Nos.—	6	to send cuttings to		10 and 11.
	7	"	"	12 and 2.
	8	"	"	3 and 4.
	9	"	"	5, one over.
The *Colonel* to No. 2, to distribute to Nos.—	10	to send cuttings to		3 and 4.
	11	"	"	5 and 6.
	12	"	"	7 and 8.
	1	"	"	9, one over.
Shylock to No. 3, to distribute to Nos.—	2	to send cuttings to		10 and 11.
	4	"	"	12 and 1.
	5	"	"	7 and 8.
	6	"	"	9, one over.
Mochamia to No. 4, to distribute to Nos.—	7	to send cuttings to		11 and 12.
	8	"	"	1 and 2.
	9	"	"	3 and 5.
	10	"	"	6, one over.
Little Nell to No. 5, to distribute to Nos.—	11	to send cuttings to		7 and 8.
	12	"	"	9 and 10.
	1	"	"	3 and 4.
	2	"	"	6, one over.

Thus in one year each member would receive a rooted plant of five first-rate pelargoniums for the sum of 10s. 6d., or at the rate of 2s. each plant.

It is obvious that the same plan can be carried out with other tribes of plants, and with many sorts much more advantageously even. For example—

DR.	£	s.	d.	CR.	£	s.	d.
12 members, at 10s.	6	0	0	1 Pelargonium (Turner's best)	1	11	6
				1 fancy do. do. ..	0	15	0
				1 Dahlia do. ..	0	10	6
				1 fancy do. do. ..	0	10	6
				1 Fuchsia	0	7	6
				1 Verbena	0	5	0
				1 doz. Hollyhocks	1	0	0
				1 doz. Chrysanthemums	0	10	9
					5	18	0
				Balance	0	2	0
	£6	0	0		£6	0	0

Suppose the hollyhocks were distributed by lot, the rest propagated from and distributed, then would there be nineteen plants, which could all be delivered within twelve or fifteen months for 10s., or at the rate of 6¼d. a plant. One more list.

DR.	£	s.	d.	CR.	£	s.	d.
12 members, at 10s. 9d.	6	9	0	1 doz. Pelargoniums, selected by dealer, highest price	2	2	0
				1 doz. fancy do...	3	3	0
				1 doz. Fuchsias do.	1	4	0
	£6	9	0		£6	9	0

* Therefore, when a bird has its larger feathers broken, their due renovation is assisted by drawing them carefully, and with the caution subsequently pointed out by Mr. Yarrell.

That is, three dozen plants to each person, or at the rate of 3¾d. per plant.

Thus far the plan, which I trust will receive your sanction; and, if so, I beg to name it The Cottage Gardener's Plant Club. Let not the dealer suppose that such a union would spoil their trade; on the contrary, they would ably tend to increase the taste for good flowers, and so increase the number of purchasers. I, for one, could never give 7s. for one pelargonium; but could, and would, be one in such a society.—A Cottage Gardener.

THE MALAY FOWL.

As this breed of poultry is quite eclipsed by the Cochin China, and it is broadly and carelessly hinted, that, like the red man before the face of the white man, it is likely to be consigned to oblivion, perhaps it would be well, before it shares this fate, to enquire if it could not be made to answer some useful purpose. True, it is not so prolific as the Cochin, nor so epicurean a dainty at table as that fowl or the Dorking; but much that is false as well as that which is true has been said and written *pro and con*. Truth, however, is *best*, and perhaps *only*, elicited by discussion, I propose, therefore, to add my mite to the general stock.

About twenty years ago I first saw the Malay breed of fowls, at which time I was kindly initiated into all the mystery of points necessary to constitute a perfect specimen by old Mr. P. Castang, a good tutor, all will allow who knew him. Whether or not I have profited as I ought is not for me to say.

The cock is in general very tall, *some* specimens in my possession having measured, from toe to beak, when stretched upon a table, 38½ inches, and most of them 35 to 36 inches. The limbs are very stout, and the legs, which are *yellow*, free from feathers. The body, owing to the great length of leg, and the closeness of the body feathers, *apparently* small, though, in reality, they are very heavy birds, some cocks being as heavy as the finest Cochins, and the hens 10lbs., but the *general* weight with me has been 9½lbs. the cocks, up to 11 lbs., and the hens 8lbs. to 9½lbs. During the years 1850 and 1851 the remnant of my stock was sold, to make room for an increasing stock of Cochins; these weighed, hens 9½lbs., cocks 11lbs., but it is right to say they were birds selected from many. I am aware that these weights are strangely at variance with those named by Mr. Dixon, but not otherwise than warranted by facts, as many fanciers can testify; indeed, Mr. D. could never have possessed or seen first-rate specimens.

The comb of the cock is somewhat singular, or, as some say, *mis*shapen, though this term can scarcely be applied with propriety to that which is the true characteristic of the breed. It may be compared to the half of a strawberry placed upon the head with the flat side downward, or, sometimes, to the half of a walnut similarly placed, for in some cases it rises *less* than the height of the half strawberry, and in other specimens *more* than the height of half a walnut. The comb of the hen is similar, but very slightly elevated, so much so, that in many of them there is so very slight a rising that they may be said to have almost *none* at all. It must not be omitted, however, that many have single, erect, thick combs, a characteristic rather of the Chittagong, though in other particulars they are perfect specimens; the peculiar comb before described is, however, the correct one, and every fancier would do well to *cull* out all that have not that property. The head should be broad and shortish, the beak parrot-like, or, as some writers have it, they are serpent-headed. They are remarkably pugnacious, the hens having often been known to fight till they have destroyed each other, and the cocks to dispatch at a blow a favourite Cochin. As I hinted before, they are not such good layers as the China fowls; but those with which I commenced, hatched from eggs procured by Mr. Castang for me, commenced laying at twenty weeks old, laid through the entire autumn, and nearly the whole winter, and throughout the two following seasons proved equally prolific. At six months old the cockerels weighed 7lbs. each, the pullets 6 and 6½lbs., and the former measured 36 and 37 inches. The flesh is certainly not so delicate as that of some breeds, but the body and wings are by no means despicable, though the legs are dark and coarse.

I have had crosses between them and the Cochin, some of which were very handsome, and continued perfectly distinct for a long time, and were perhaps worth perpetuating; others, and most of them, varied as greatly as can be conceived from each other, and were as objectionable as could be in every point of view. The most curious, and the prettiest, cross I ever saw was an accidental one, between a white Malay cock and two small Bantams, one yellow the other black. From the very assiduous attentions paid by this gigantic bird to these diminutive creatures, it was supposed the eggs might be fruitful: one from each was tried, and both succeeded; the one from the black hen proving a pullet, being very dark, the one from the yellow a beautiful speckled, or cuckoo-coloured, cock, with golden hackles. The following season the hens were crossed with a Sebright Bantam; these, again, with the cuckoo-coloured cock, and the produce was a race of grey, cuckoo-coloured, birds, which were perpetuated for a long period without varying, a few of which were presented to the Surrey Gardens, but shortly after died. In size they did not much exceed that of a common Bantam, and in shape were like a partridge, with full breast and splendid tail; they had the comb and head of a Malay, yellow beak, and yellow legs of very moderate length. I have also seen crosses with the Spanish, resulting in a race of magnificent birds, better layers, and fitter for table, than the Malay.

From these remarks it will probably be conceded that, ere they are quite discarded, it would be desirable to attempt some crosses with them, as their size would improve many of our common breeds, particularly if those of greatest weight, shortest legs and neck, and general good shape were chosen for the purpose.—Q in a Corner.

POULTRY EXHIBITIONS.

"Honour to whom honour is due."

At all cattle shows, over each animal there is placed an account of its breed, breeder, feeder, mode of feeding, age, &c.

Now, let this be done at all future poultry exhibitions, and then all entitled will receive their share of credit, or, to recur to my motto, honour will be given to whom it is due. And let this be strictly enforced, expulsion from all future shows following every transgression of the rule.

To make my meaning clear, suppose the birds exhibited to be Cochin Chinas, the female parent being of Mr. Punchard's breed, the male of Mr. Moody's, let the label run thus:—"Bred from a 'Punchard' hen, and 'Moody' cock, by Mr. ———, and reared by him on groats and barley-meal. Age six months."

Besides the due award to merit, there would be the public benefit, that we should then see the effect of certain crosses and modes of feeding; know which would produce the greatest weight, with greatest beauty of form and plumage, and give to every man his full share of credit.

I think it would not be difficult to prove, that had some such rule been laid down at first, some, and no small credit, would have fallen to the share of those who at present are kept in the back ground, though many have availed themselves of their breed to improve their own. Speculators, too, would have found their proper level, and the judges themselves would have been greatly aided, and prevented from falling into some blunders; for it is a fact almost patent, that prizes were awarded to birds of a particular breed, which privately had met with wholesale condemnation.

As "Amateur" is affixed to so many communications, allow me for the future to subscribe myself.—Q in a corner.

PRACTICAL OBSERVATIONS ON THE MANAGEMENT OF BEES.

By Henry Wenman Newman, Esq.

(*Continued from page* 183.)

THE HONEY HARVEST.

"Aut pressa puris mella condit amphoris."—*Hor., Ode* 2.
(The out-pressed honey stored in pure vessels.)

The best practical mode of collecting fine honey without killing the bees, is to keep as many stocks as the country

will sustain, and to have in good seasons a couple of glasses fit to contain seven or eight pounds of honey on each hive. When these glasses are filled, it is always with pure, or virgin honey, *without brood-combs*; and there is this benefit attending it, that the queen is seldom or never in the glasses, as she is in the "nadir hives," or "side boxes," and other compartments of the different new-fangled hives; for she seldom visits these places, excepting to lay her eggs. Mr. Nutt, I believe, states that the queen never goes into the side boxes; but it is certain that she will go wherever there are brood-combs, and I know from experience this to be true. But, then, frequently the side boxes are partially filled, and in steps our very uncertain climate, with its wind and rain, and the labour of the bees in the side boxes is at an end; the poor bees have enough to do to keep the centre all right.

How often this depriving system fails, unless done in the most skilful manner! and as often does the fumigating. I do not think it succeeds once in a hundred times. If too many combs are taken away, the bees decline from that moment; in a case of my own, the swarm deserted on a fine day in April following.

I like Mr. Gelieu's plan of cutting out part of the combs from old stocks. This, when done with judgment, is one of the best modern improvements. In January, before the queen begins to lay, turn up the hive, and take about one-third or one-fourth of the old combs out, and so repeat this in very old stocks, until they are quite renewed. Mr. Cotton, who is all for humanity, talking of the weak stocks, says, "feed them with a brimstone match!" Now, after all his attempts to save the bees, this is rather inconsistent. However, he has done a most desirable thing in trying to introduce bees into New Zealand, and I most heartily wish him success. I have not heard yet whether he has succeeded.

One thing is certain, that in bad seasons the majority of the hives must be fed all the winter. The question is, whether it is not good policy to destroy some of the late swarms that have their eight or ten pounds of virgin honey, and prevent a most awful amount of pillage!!

In 1844, my number of hives was *twenty-six*, and this number (being a dry, barren, unpropitious year) I found was too many for my country to support, notwithstanding all my bee-flowers. There was no honey-dew that year.

Mr. Huber asserts, that a country of meadows is better than one of corn and vineyards; but there are certainly more bees kept in England in corn districts than in the grass districts. A mere grass country may be a country of milk, but not one of honey.

The colour of honey differs in the different countries where it is gathered. In a heath country, it is of a darker colour, and has a particular flavour. Honey should be gathered before the weather gets cold, as it runs from the cells more freely; and the combs ought to be cut, and the honey allowed to pass through a seive. Virgin honey will require little trouble to save and put by. All combs ought to be taken in warm weather, in order that it may run off easily. Many persons prefer to eat the pure first year's honey with the comb; at all events, the virgin honey ought to be kept entirely by itself, as the least mixture of the old will spoil it.

Here is another of the delusions about bees. Some writers gravely talk of a farmer paying his rent by bees! and talk of his keeping 200, or even 300 hives! Even those farmers in England who keep from fifteen to twenty stocks, on the average of seven years, find a "beggarly account of empty boxes." In nine cases out of ten, they do not pay sufficient attention to their bees to make them pay, and without the greatest attention, it is no use to keep them.

MERITS OF GAME FOWL.

As to the most desirable breed of poultry to keep, allow me to offer a few words of advice, the result of ten years experience. I find the game fowl, and also a breed between the game and India (or, as they call them here, the *Hinjey*) to be the *best* birds for table: their flesh is white, tender, and juicy; the birds fatten on a very small quantity of food, they have, moreover, the breast bone perfectly straight. The hens generally lay from 10 to 17 dark-coloured eggs, and then want to sit. The next best is the Dorking, both speckled and white. This breed of birds grow to a greater weight than the above, but, as a set-off, require a much larger amount of corn to fatten them. I do not know how it is, but with me the Dorkings prove very unprolific, both as to eggs and chickens; they are, however, excellent nurses. The Cochin China comes next. These birds are certainly the best layers, even beating the Spanish and Monorcias.

By some unknown reason the light birds are now all the fancy; but, although I have kept both the light and dark varieties, I never could distinguish the least difference in their productiveness. I fancy the dark birds are the strongest, but this may be only a matter of opinion. To give a slight idea of the superiority of these birds, I will just mention the produce I obtained from one pullet, a bird bred from a dark cock and light hen, and which, when only five months old, commenced laying, and laid an egg every day for 69 successive days; she then set on 15 eggs, and hatched out of them 13 chickens, which, when four weeks old, the hen cast off; began laying again, laid 42 eggs; set, and the second time brought forth, out of 14 eggs, 11 chickens, both of which broods are now living and doing well.

Spanish and Monorcias are both excellent birds for laying, but for table are very indifferent, partaking in form and nature something after the Alderney cow, which, although excellent for the dairy, is very poor for the butcher. The common dunghill fowl is very prolific, but is very small and ill shaped. I would strongly recommend all persons desirous of keeping poultry to try the Cochin China, leaving colour entirely as a matter of fancy. As regards the legs being feathered, I find some have feathers and others none, although bred from feather-legged birds. The dark birds lay the largest eggs, and also the darkest coloured.—W. M. J.

THE DOMESTIC PIGEON.

ON LAYING AND INCUBATION.

(*Continued from page* 139.)

We find some females, which from disease, or some defect, cannot lay. The egg remaining in their body a much longer time than it naturally ought to do, gets hard, and the shell becomes gravelly. A kind of fleshy substance, no doubt occasioned by the inflammation of the part where the egg is formed, sticks to the egg, which it embraces on both sides, and holds it like roots to the intestines, to which it adheres so closely that the egg cannot release itself. The female attacked with this complaint is no longer fit for breeding; she remains a sufferer for a long time, and at last is found dead in a retired corner. This disease is produced by inflammation, which has lessened the opening of the passage or neck of the matrix.

Some amateurs, on discovering this disorder by feeling for it, have attempted to cure it by means of an operation, but the pain they cause the suffering animal rarely saves its life, and the bird always remains a sufferer, and no longer fit for breeding. It would, therefore, be much better to relinquish it altogether.

It may happen, although but rarely, that a female, after having laid one egg, remains seventy-two hours, and even more, before laying the other. As soon as we perceive such delay, we must watch her attentively, and if the interval exceeds seventy-two hours, we must no longer trust to nature, but resort to remedies, which we must administer with judgment, and in time. These remedies consist in making her swallow, by placing in her beak small balls of butter or soap, and then by opening the orifice of the fundament with the finger which has previously been rubbed with butter, afterwards give it one or two injections with good olive oil, by means of a very small syringe. Some persons make females attacked with this disorder lay, by forcing the egg from them. We will now describe the manner in which they hold them. Whilst with one hand they gently open the fundament of the bird, with the other they press on its abdomen, between the egg and the breast-bone, and by gradually increasing the pressure, force out the egg. But by resorting to this method, the egg almost always breaks in the inside, and the bird is wounded for life.

Other females lay nothing but *soft eggs;* that is, eggs

without a shell. They can never be hatched, although fruitful, because they will not bear pressure. This fault often proceeds from the female not possessing the secretory organs which should furnish the calcareous earth that forms the shell; then there is no remedy. Sometimes it may be caused by a simple organic obstruction occasioned by fat or inflammation, and in this case the bird may be cured by changing the nature of its food.

In all cases we should advise amateurs not to take this trouble, except for valuable animals, as the success is always doubtful. We also meet with couples that constantly have barren eggs. The difficulty is to discover which of the two is barren. To do this, we must couple them with two others, and immediately remove the one in whose nest we find unfruitful eggs at the first laying. However, we must not be surprised if both should produce young ones, for this defect may be brought on by an incompatibility of organisation altogether inexplicable. If several pairs of pigeons should be attacked with this complaint in a dovecote or dove-house, we must not hasten to uncouple them, for in all probability it might be the result of bad food, or some other cause besides that of sterility; for example, to produce this effect, it is only necessary to have two or three smelter pigeons in a pigeon-house of fifty pairs. In these two cases, nothing is more easy than to remedy these inconveniences, either by changing the quality of their food, or by removing the disturbers.

A pigeon may preserve its fruitfulness to the age of ten, or twelve, or even fourteen years; but it generally loses it sooner. The females especially do not become exhausted so soon as the males, and when we perceive that as they advance in age, they lay a greater number of barren eggs, we must take away their old male, and give them a young one, in order to procure again a good production. When an old pair of pigeons no longer produce, it may be useful to keep them to bring up other young ones, and even to sit on fresh eggs, for these birds preserve the faculty of hatching and feeding the young ones, even to an extreme old age. Some have been seen to occupy themselves very usefully in this manner, even after having lost their sight. A fact more interesting, because it shows a character of great kindness in some of these animals. As soon as they hear the plaintive cry of a young pigeon neglected by its parents, they hasten to feed it, and will frequently beat its unnatural parents to make them return to the cares of their young family.

When we possess a good pair of pigeons, we must not let them lose time by setting on clear (barren) eggs, but remove them; and they will produce others in about eight or nine days. To satisfy oneself if the egg is fruitful, we must look through it in the following manner:—Take one and hold it between the eye and the light of a candle, or the rays of the sun; if we cannot perceive in the middle of it a small round substance, forming a dark spot, it is not fruitful.

If the egg is good, we shall immediately perceive the spot we have just mentioned; four days after we shall see some small blood-coloured vessels extending round it; the sixth day the egg will have a darker tint, and entirely lose its transparency. Sometimes, however, the little one may perish in the shell, at an age more or less advanced. It is as well to know how to discover this, by the following signs: the egg becomes a deeper colour than usual, and is covered with some whitish spots, and its weight decreases as the young one withers. On the contrary, if it is good, it becomes heavy, and one may perceive a vacuum made by the separation of a membrane towards the large end, but a little obliquely.

(*To be continued.*)

DOMESTIC PIGEONS.

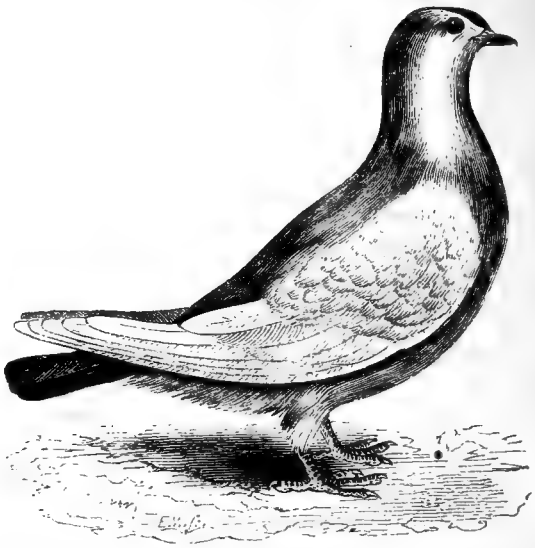
(*Continued from page* 139.)

TWENTY-SECOND RACE.

Pied Pigeon (*Columba impacta*). — The under mandible of the beak is white; it has a small spot of blue, yellow, black, or red, colouring the upper mandible, and extending to the middle of the head; the tail is the same colour as the spot, and all the rest of the body is white; the feet are naked, and the iris black.

Some of the Pied pigeons are occasionally found with a white tail, but these degenerate birds are not valued by the amateur. Besides, pigeons of this race may easily be obtained by crossing a male or female with a mixture, or a Carrier with a black tail and white plumage, which are commonly to be met with. In the first generation the young ones will already have a coloured bean on the front of the head, and in the second they may be perfect.

Common Pied Pigeon (*Columba impacta vulgaris*). —



This bird, which is much esteemed by the amateur, is marked as if with the stroke or dash of a pencil, black, blue, or red. It has a filament round the eyes, and is about the size of a common mixture. It is very fruitful.

Yellow Pied Pigeon (*Columba impacta lutea*).—This does not differ from the preceding, unless it is in the tail and cloak, which are yellow. These birds, as well as the preceding kind, produce well in the closest captivity; even in a common parrot's cage.

(*To be continued.*)

WARMTH, NOT MOISTURE, FOR HENS NESTS.

Seeing so many complaints in your valuable paper about the non-productiveness of eggs, and also seeing that a "Constant Subscriber" recommends placing mould in the hatching nests, with turf above it; as I have tried the same plan, I take the liberty of stating that I cannot say that I have seen much benefit from it. I am disposed to attribute the unproductiveness to other causes than that of the "dryness of the season." As a proof of which, I might mention that a friend of mine, by my recommendation, placed his hatching hens on a loft, beneath which there was a large fire, and the result was, as I anticipated, exceedingly favourable; there being about 85 per cent. of birds for the number of eggs, many of which were "carried." It was impossible to select a *dryer* place. I might also state that I received some eggs (which had travelled by rail near 200 miles), seven of which I placed beneath a hen, in a box made of *half-inch deal*, and *suspended* against a wall, all of which proved productive. The birds (Spanish) are about a month old, and "doing well."

If I might be allowed to venture an opinion, I would say that if the eggs have been rendered fertile, that their unproductiveness, may, in many cases, be attributable to placing *too many of them under each hen*. When a hen has more than she can properly cover, those on the outside are not kept up to the temperature necessary to the healthy development of the chicks, the consequence of which is, that they are seldom strong enough to extricate themselves from their shells. Another disadvantage arises from giving too many eggs; the hen, anxious to cover them all, pulls them beneath her so much, that they are almost sure to get one above another (if I may so write), a position in which many of them get broken. In my opinion, a hen never ought to have more than 9 Spanish, 11 China, or 13 Hamburgh fowl's eggs.

I purposed to allude to the question—Which is the most

profitable kind of fowls? but I find I have not time just now to do so.—W. T.

[The above is from an extensive poultry-keeper, and the oftener we see his handwriting the more we are pleased.—Ed. C. G.]

MONTHLY WEIGHT OF A HIVE.

Some years ago I kept bees at Blackheath, and as I weighed one of the hives very regularly on the first of each month, for one year, I have thought that the list of weights may be interesting to some of your readers.

Nett weight; the hive and board having been weighed:—Oct. 1, 23 lbs.; Nov. 1, 21½ lbs.; Dec. 1, 21¼ lbs.; Jan. 1, 20 lbs; Feb. 1, 17½ lbs.; March 1, 15½ lbs.; April 1, 13 lbs.; May 1, 17¾ lbs.; June 1, 26½ lbs.; July 1, 19¼ lbs., having swarmed in June; Aug. 1, 18 lbs.: Sep. 1, not weighed; Oct. 1, 15¾ lbs. Constant Reader.

NOTES ON VEGETABLES AND NEW VARIETIES.

I bought, last year, a number of new sorts, advertised in various works on gardening, several of which turned out quite worthless, and many were the same variety I had grown before. I bought them chiefly to give them a trial, and to prove their qualities with the older sorts. The observations I made on their merits will perhaps interest your readers; and I have also added a few remarks on such old varieties as are fit for the cottage gardener, as I really think that the growth of vegetables has been a little neglected of late years, the rage for flowers only giving them a secondary thought with many gardeners; but with cottagers they ought to be certainly the primary object, as they are surely the greatest addition to the comfort of a family.

Beans.—I never plant but three kinds of these. In the first or second week in January I plant a few of the *Green Mazagan* for the first crop; the last week in the same month a few rows of *Long Pods*; and after that, in succession, I plant once a fortnight some of the *Old Broad Windsor*, and I have seen them grown to a very large size in this part of the country (Wiltshire), as there are many bean shows held at the various village public houses, where prizes are given for the largest and best-shaped beans, and they are certainly grown to a state of great perfection. *Marshall's Prolific* I grew last season, and find that it is very useful as an early and good cropping sort.

Borecole.—I find the *Dwarf Green Curled* and the *Chou de Milan* the very best varieties for the cottage garden.

Brussels Sprouts.—This is an excellent vegetable, and the seed cannot be sown too early, so as to get the plants forward for planting out; and they require good ground, with plenty of manure, otherwise they will not cabbage. I do not think that any vegetable can be nicer than a dish of Brussels sprouts well-boiled and served up after the manner of asparagus. The imported seed is the best.

Brocoli.—I sow *Grange's Early White* for the first crops; also a little *Cape*, as it is not long in coming to perfection; *Knight's Protecting*, and the *Portsmouth*, for late crops.

Cabbages.—There are many sorts of these, yet if you buy ten different sorts of seed you could scarcely perceive a difference in their produce. Nearly every district has its favourite kind; the best that I ever saw for autumn sowing and planting to stand the winter, is *Wheeler's Imperial*. It is both early and will never run to seed; you may plant out ten thousand of them, and never have a running plant among the number; and it is the best sort grown for small gardens; for what is a greater disappointment to a cottager to find that, after having bestowed a winter's care on his plot of cabbage plants, ninety out of every hundred start to seed. I have grown this sort for the last ten years, and never saw an instance of one running plant in my garden, when I have purchased of Mr. Wheeler.

Savoys.—I purchased a variety of the Savoy cabbage called the *New Ulm Savoy*, but which was not so good as the old *Dwarf Green*. A good Savoy cabbage is a very useful vegetable for the cottager. I consider the first week in May quite early enough to sow the seed, for if planted too early, they often crack and spoil before they are wanted for use.

Carrot.—For the cottager and small gardens the *Early Horn* is the best variety, as it may be sown very thick, so as to begin drawing them early, and leave the others room to grow. The *Early Green Topt* is also a good variety where some are wanted for the winter.

Onions.—The *White Spanish* and *James's Long Keeping* are the best sorts for the cottage garden. I generally mix the seeds together, and sow in drills for the convenience of keeping them free from weeds. J. K. T.

FLORISTS' FLOWERS.

Calceolaria (*J. S.*).—Form good; colour rich crimson, netted with gold. A desirable flower.

Pansey (*Irlandais*).—Your Pansey, *Candidate*, is of good form, but the blue and straw colours are too clouded, or muddled together, to permit it to be a first-rate flower.

Pansey (*R. R. C.*).—Your Pansey, *Mary Jane*, is striking and novel; form good; standard petals violet; under petals yellow, with broad violet edge and spot. Your other Pansey, a purple self, with blue tinge around the eye; the eye small and partly white, partly yellow, is of good form. Both are handsome desirable flowers.

Calceolarias (*E. Turner*).—Form good in all. No. 2. Large reddish plum-coloured blotch on a creamy ground. No. 4. Deep maroon mottly blotch, on straw ground. No. 5. Dark plum blotch, on French-white ground. These three are striking flowers, and sufficiently novel to merit attention.

Pansey (*E. H. J——, Clapton*).—Form excellent; medium size; intense purple self so dark as to appear black, with flush of blue round yellow eye. A very beautiful flower.

Calceolarias (*M. E. S.*).—Your flowers packed in cotton, instead of damp moss, were all shrivelled up. No. 5 is *Neighbour's Improved Cottage Hive*.

TO CORRESPONDENTS.

Boronia serrulata, &c. (*F. N.*).—You will have seen last week that you have been partly attended to. The *Platylobium* was lately referred to. The *Aotus* is a very graceful plant, and fuller notices may be given ere long; meanwhile, you will not err in giving them the treatment recommended for *Boronia serrulata*, only the temperature in spring need not be so high. We are not quite sure that the flower sent belongs to *B. pinnata*; there is rather more pink in it than that flower generally has, unless when in high health and full in the sun. If the shoots are very twiggy it may be *viminea*; if the leaflets are in threes it may be *triphylla*. But we have had *pinnata* as high coloured, though generally described as purple.

Turf and Earth Pits (*Verax*).—We have never found any difficulty in making these pits, though when of the latter material they require to have the mound or wall wider than it is resolved to leave them at last. We are, however, much obliged for your suggestion—"that the earth rammed in a frame or mould would be far more durable, and that giving an account of the operation would confer a public benefit—frame, rammer, &c., covered afterwards with gas-tar." We have made such pits, having a rough stationary frame of old boards and slabs at the sides; but we have not made any a piece at a time, with a moveable frame, as you describe. We should have no hesitation in having a strong frame of wood, made smooth on the two inner sides, and kept a little damp where the clay or earth was firmly rammed against it; and, when thus firmly consolidated, the frame moved off, just as a brickmaker disengages a brick from its mould. But we would rather some other person would give details who had tried some such method. Of course, the width between the inner sides of the frame would give the thickness of the wall. However made, there can be no question of the utility and economy of such walls.

Gas-tar (*Ibid*).—This, mixed with dry, sharp sand, makes a mortar very durable and waterproof; and for certain purposes, such as has already been referred to, we have known it applied as a casing to old brick walls, filling every cranny, though it is no enviable job for the operator. Would you kindly inform us how you have used such mortar, or seen it used.

Figs (*R. P.*).—It is by no means unusual for in-door figs to cast autumnal-formed fruits. Why, it is not easy to say, except that the fig, as to its fruit, is very susceptible of any changes or extremes of any kind. Is your roof very much shaded? You have not stated the particulars so well as we could wish. We have seen figs on back walls of houses smothered with vine spray, luxuriating indeed in foliage, but of very barren character. Although the fig will endure shade, a total deprivation of the sun's rays is by no means desirable. Have you pinched or stopped the young wood when five or six eyes long? Probably your tree is too luxuriant.

Old Orchard (*Georgius*).—Your worn-out orchard is an awkward case to begin with. "The knowledge of a disease is half its cure." Surely your subsoil is bad, and the roots are in it. Your case is put so vaguely that it is somewhat unsafe to answer it. Dead points to shoots are generally sure evidence that stagnated moisture or a bad subsoil exists. Rely upon it, pruning *alone* will not be a cure. If you retain the trees, begin by thorough drainage, if damp, and a system of top-dressings, with a prohibition of spade culture over the roots. In addition, prune them into new growths next winter. *Melons* are impregnated artificially, by inserting the male flower, divested of the corolla, in the interior of the female blossom. For *sowing small seeds*, there is no implement so cheap as a pint glass bottle, with a small quill passed through the cork.

Cinerarias and Calceolarias (*E. C. Sharpin*).—These done blooming should be set out-of-doors; and, as soon as the *cinerarias* send forth side slips, they should be cut off and put in as cuttings, in sand, in a little heat. As soon as roots are formed, pot them off into small pots

singly, and place them in a cold frame, shading from the sun. When the pots are filled with roots, repot and grow them on; by the time frost begins to appear, they will be nice bushy plants. *Calceolarias* cut down, and put in cuttings for stock next year. The old plants of both are of no use after a crop of cuttings are taken off; they should be thrown away. It is too early to cut off the fore-shoots of *pear-trees* against walls. It is a good plan to bend them downwards.

Diseased Fuchsia Blooms (*Marwood*).—The blooms of your fuchsia "Sapphire," are all as if they had been scalded. This is not usual to that variety, and there must be something wrong in your treatment, either in giving air, exposing to the sun too much, or by syringing over the blooms during bright sunshine. As you do not state the particulars of your management, we are not wizards enough to divine the cause. If you desire further information, pray enlighten us as to the way you manage the plant.

Rust in Grapes (*F. Berry*).—Rust in grapes is occasioned by more than one condition. Nothing more conduces to it than neglect of early morning ventilation. Few are thoroughly aware of the serious accumulation of heat in vineries with an early sun. A very hot and damp air is almost sure to scald, and scalding engenders rust. Rust is seldom seen out-doors; but the open air is capitally ventilated.

Nutt's Hives (*A Constant Subscriber*),—Poor Nutt! we believe, has long since been "hid out of our sight," therefore he cannot be consulted; and it would have been well if his hives had been so too, for they have caused more trouble, vexation, and disappointment, than any of the kind has ever before done; we have made fire-wood of ours long since. The bees *will* swarm from them in preference to working in the side boxes; and if, *by any chance*, they put a little comb into one of them, the queen is almost sure to follow and fill it with bloom.

Lameness in Cochin-China Fowls (*D. C.*).—Cochin-China fowls are not more apt than other kinds to lose the use of the legs, but are, on the contrary, exceedingly strong and hardy. I quite agree with "D. C." in attributing the lameness of her two cocks to their descent from the perch. Roosting on perches is decidedly not good for such heavy fowls as the Cochin-China. After trying different plans, I find the best roosting place for them to be an open platform, made of either slaters' laths, or quartering, raised a few inches from the floor of the roosting-house; over this is spread a bed of clean straw. Lameness in large, quick-growing fowls *may* proceed from an insufficient supply of phosphate of lime. Anster Bonn.

Best Fowls to Keep (*H.*).—You having fowls running in a field frequented by other fowls, will find it very difficult to keep to any breed in particular. Having lost one bird from fighting with the others, renders it desirable that the cock should be of some strong spirited breed likely to become master of the rest—a game cock, a Malay, or a fine Cochin-China. I find the Cochin-China in *all respects* the best kind of fowls to keep; their eggs are of a medium size, and produced in great abundance; they are capital fowls for all domestic purposes, and, I think, very handsome. "H.'s" common hens must be pretty, and fifteen eggs in a week from three proves them to be good layers also.

Anster Bonn.

Play-ground Concreted (*D. T.*).—You need not put on the second layer of flints and lime unless you want to raise the play-ground higher; two inches of common gravel, such as you would put on the top of a walk, will be sufficient; to this add one-tenth of fresh slacked lime, mix them well before laying down, and break the lumps with the back of a spade, rake and roll, then a good watering to soak the whole through and through; as soon as the surface is dry enough for a second rolling, run over it, or if the lime appears much on the surface after the watering, you had better lay on just as much of the finest gravel as will barely cover the whole surface, and then use the roller repeatedly; as long as the whole is damp, it can hardly have too much rolling. Your "six inches of rough flints for a dry bottom" would be a sufficient bottom for a railroad, if the flints were concreted with lime and gravel. Two inches of pebbles or small flints, and an inch of concrete, as above, would do for any play-ground, not excepting both sides of the play-wall in the Academy Park at Inverness.

Elder Wine (*M. R.*).—Pour three gallons of cold water over one peck of berries; let them stand for twenty-four hours; then boil the whole for twenty minutes, adding 1 oz. bruised ginger, ¾ oz. of cloves, and ½ oz. cinnamon, tied in a muslin bag; strain off the liquor, and add 3 lbs. of moist sugar to the gallon, and boil again with the same spice for quarter-of-an-hour; when cold, put it into a cask, and if required for long keeping add half pint of brandy.

To Preserve Gooseberries.—When green, top and tail, and fill a dry jar; tie over it a piece of bladder rather loose, but secure it tightly round the rim, place the jar in a vessel of cold water nearly up to the bladder, set it on the fire, and let it simmer for twenty minutes, then remove the vessel, and allow it to stand until cold. These will keep good till gooseberries come in season again. Damsons and plums may be served the same, only that they should be put up nearly ripe.—S. P. Rushmere.

Rhododendrons (*J. G.*).—*Anthopogon* is a dwarf alpine species of no great beauty. It belongs to the bearded section, but is very different from *barbatum*. *Lepidotum* is distinct from *dauricum*, but is related to it. Lord Hardinge sent thousands of seeds of these from Simla. If you want gay flowers rather than botanical species have nothing to do with either of them.

Budded Roses (*South Wales*).—About the end of next August you may take plenty of buds from plants budded last year, and if yours are perpetuals, you may let them bloom after the end of July; most people allow the first blooms to open as if they were on old plants; your plan is much better in the long run.

Bees.—*T. J. Korn* says, "I put a six-pound glass on one of Neighbour's Improved Cottage Hives the first week in May, and when nearly full of comb, which was in about ten days, another holding three pounds, thinking, but erroneously, that this additional room would effectually prevent swarming." Your glasses were not large enough; the bees had not sufficient room. Three six-pound glasses would not have been too much, as your stock was, in all probability, a very strong one.

Bees (*F. F.*).—Your hive B will, in all probability, swarm very shortly, if it has not already done so; A had better remain as it is. Your hives are *very much* too large to put a swarm into. If your stocks are healthy and strong, you need not regard the ants, the bees will defend themselves against them.

Bees (*T. H.*).—In all probability, the cause of your bees leaving the hive (for it could not be called swarming), was on account of your placing a glass on so early; you should have waited till they had established themselves in the hive, certainly fifteen or twenty days. You having returned it to its parent stock, it will in a few days come out again, and then do not put on your glass till want of room in the hive appears evident.

Poultry in Limited Space.—*G. G., of Liverpool*, mentions that he has always been a lover of poultry, that residing now in a town, and confined to limited space, he would still like to keep *a few* fowls. Having confined space only, he is earnestly recommended *to confine himself to a few*, and the result will, no doubt, be pleasure and success. It is to be feared that four families of fowls confined to a portion of ground measuring (houses included) 46 feet by 4 feet 8 inches, two of the stocks being placed on a sort of second story, would suffer much for want of air and liberty, and the raking and scratching in which they so much delight. When there are chickens, where are they to go? Is this a question which has escaped the recollection of the enquirer? I fear fowls so kept would get unhealthy, at any rate after the first year; and hope it will not be unpalatable advice to G. G., not to attempt more than two kinds on the ground named; one would be better, and if these could occasionally have a run out into some field, street, or lane, it would be very beneficial to them. I think the Cochin-China fowls the best sort, but there are many other choice kinds which are very good.—Anster Bonn.

Dorking Combs and Poland Ruffs.—Several weeks back I troubled the lovers of the Dorking fowls with a question, whether the comb of that fowl must of necessity be single. This question is now settled by high authority, for the promoters of the Birmingham show for 1852, offer prizes to both single and rose-combed Dorking fowls. The same authority has decided similarly about the ruff or beard of the golden and silver-spangled Poland fowls.—Anster Bonn.

Preserving Plums without Sugar or Water.—*Fill* the jars or bottles with the fruit, and tie bladders over them; pierce the bladder with a large needle to prevent bursting. Place them in the pot they are to boil in, in cold water, then place on the fire, and boil, and continue to boil for twenty minutes; take from the fire, and stand till cold. Store in a cool dry place.

Veronica Decussata (*Devonian*).—Many thanks for the opportunity of seeing the flowers of *Veronica decussata* for the first time. They are pure white, and are produced in close rings near the ends of the shoots, and are about the size of those of the Mezereon. I hope "Devonian" will succeed in getting a cross between it and *speciosa*, the fine purple New Zealand species. Such seedlings would probably live out at Edinburgh as *Veronica decussata* does at Inverness. *Bryanthus erectus* is a true Menziesia, and very likely a cross seedling. The old *Menziesia polifolia* has a natural tendency to vary, though slightly, from seeds. The white variety of it discovered in Cunnemara, in 1820, growing alongside the old sort, is supposed by good judges to be a seedling sport; be that as it may, kindred genera, as heaths and rhododendrons, are notorious for their freedom of intercourse, and, therefore, why not the *Menziesias* among themselves, and with the section of them called *Bryanthus*, which are very rare in this country? With respect to the little Kamtschatka rhododendron, I think Dr. Herbert mentioned somewhere, that a brood of cross seedlings was once raised from it, which could not be reared; but that is no reason why other attempts should fail, and even should a union between it and any of our older rhododendrons not succeed, there can be little doubt about some of the new Sikkim alpine rhododendrons uniting with it, and that a new race of trailing rhododendrons, with the habit and sportiveness of the rock rose (Helianthemum), might be got after awhile. "The prince of climbers," *Beaumontia grandiflora*, casts off the old leaves as in "Devonian's" case; and, if required, it might be trained up to the top of the Crystal Palace as bare as one of the bracing rods; on the other hand, it can be formed in shape like a pillar rose, and be always evergreen; but, for ordinary conservatory work, the best way to treat it is to train and prune it exactly as you would a grape vine, taking care that the bottom is well clothed with side-shoots before the top is allowed to go too far; the same precaution is necessary for the vine, as, if it is left in very long rods the first two years, the bottom eyes are apt to lie dormant, or if they grow at all, the shoots are weak and bear no fruit. The *Beaumontia* may be pruned any time in the year, just as soon as the flowering is over; but May and June are the best months to cut it. The side-shoots ought always to be cut to one or two joints, and if the leader is strong, it must be cut back to half its length. The whole plant, after pruning, will be as bare as a May-pole, except what leaves may be on the leading shoot; in August, any of the shoots from the spurs that appear too strong, or running away too fast, may be then stopped; the shoots from this break will all flower next year, only a little later than those not cut. After pruning, is the right time to clean off scale or other insects.—D. Beaton.

Bad Bedding Plants (*C.*).—You are only like nine-tenths of all we have seen this year, and have seen for the last ten years, and what will always be seen until the tables are turned. Flower gardens *ought* to be as gay in May and June as they usually are at the beginning of August. We have said all that can be urged in favour of a better state of things. As late as last year we have shown how one of the largest flower-gardens in the country was made brimful and gay from the moment the spring flowers were over. We have also croaked for years about May and June being blanks in more than half the gardens all over the country. It is true that this was an exceptional spring; plants could not be trusted in or out of doors without much coddling, and the planting season was dreadfully cold at nights. Bedding plants and forced vines will never agree; the moment the vinery is shut up for work every plant ought to be removed to a still cooler place. No art or science can ever get over the difficulty of making bedding-out plants and vines agree, and, without surmounting it, plants will look poor and sickly for the first month after planting; but during that time, a temporary crop of transplanted annuals ought to be in full bloom, in rows, between the bedding stuff; there is no other means of looking

brimful and gay at that season; hardy herbaceous plants are a poor substitute for this kind of display, and we are glad you have given us the opportunity of repeating this once more.

PLAN OF GARDEN (*J. S.*).—The plan is filed; we never saw that style of massing groups of beds; when the planting is well balanced it must look very gay from the windows.

SLOPING BANKS (*W. C. C.*).—Your plan for making a sloping hedge on one side of the grass garden, to match a turf slope on the other side, is a capital idea, if not an original one. It will answer perfectly, and *Cotoneaster microphylla* will be your best plant to use, as you can keep it more easily to any shape required, and it will grow much faster in poor or bad soil than either yew or box, and besides will look less old-fashioned. The *Pyracantha* would not suit at all; it is too straggling, and would require supports.

SALVIA PATENS.—*M. M.* says, "In one of your former numbers, I think in 1851, you wished to know the result of having the *Salvia patens in the ground all the winter.* I have two large beds of it. One, two years old, was covered up the previous winter as soon as frost set in; the other, only seedlings planted out last summer. They were both unprotected till the winter had set in, and then they were covered with ashes about four inches deep. Both beds are now throwing up strong shoots, and give every promise of being as brilliant as they were last year. I would, however, never advise their being allowed to remain unprotected so late as mine were last year, but it was unavoidable here at the time."—M. M.

EARLY SWARMS, &c.—*Amateur* says, "We had a fine swarm on the 15th of May, and a strong cast on the 5th of June, both doing well. A friend of mine had a strong swarm the first week in May, and on the 1st of June a large cast from it, and at the same time a swarm from another hive. There are bean-fields in the neighbourhood, which form quite an attraction to them. The *Eccremocarpus scabra*, noticed in a former number (No. 152), as having lived five years, paid the debt of nature this spring; the stem, which was of considerable thickness, being quite split into fibres just as if it had been twisted."

BEES.—*J. K.* says, "I use Neighbour's Hives with five bell-glasses. What is the best time of the day to remove them when full of honey?" Remove your glasses in the middle of a bright day; put on the fifth glass immediately, and give all the room you can, or a swarm will leave the hive.

CHILLED EGGS.—*N. P.* says, "I have had a hatch of hen's eggs that have all hatched after having been twice left till quite cold; once about a week or ten days after they were set, and again two or three days before they ought to have hatched. However, having seen an instance mentioned in THE COTTAGE GARDENER of eggs hatching after being allowed to get cold, I was determined to try mine, and though my hen was disturbed by another broody hen, who drove her off, and took her place twice during the last week of her sitting, the chickens were all hatched on the third and fourth days after the proper time, and are lively and healthy."

GREEN SCUM ON WATER (*E. S.*).—Is there any correspondent who can put a lady in the right way to get rid of the green scum on a pond? Gathering it off only keeps it down a week or two.

GEANT DES BATTAILES ROSE (*C. M.*).—No rose can flower more freely than this usually does. If you have not got the Manetti head on the stock, as your friend thinks, the soil must be far too rich, or too wet in the subsoil. Root-pruning, if this be the case, is your only remedy. Can you not compare a shoot of your rose with those of a known Geant des Battiales. A child could tell the difference between the leaves of a Manetti and a Geant.

PLANTS WINTERED AT ASHBURTON.—*Exoniensis* says:—"The following plants have been grown in the open air at Ashburton (Devon), during the last winter, and unprotected:—*Acacia armata, Erica Bowieana, Clianthus puniceus*, and various *Calceolarias*."

CUTTINGS FOR AMERICA (*Ibid*).—Cuttings of *Fuchsias* and *Pelargoniums* had better be rooted here several in a small pot; be cut back, and taken out by your friend, in their pots, packed closely in a box covered over with glass.

BOOKS (*Monandria*).—There is no work with coloured plates on *British Wild Plants*, that is cheap. *Sowerby's English Botany* has such plates, but the work is now republishing in eighty parts, at 3s. 6d. each. Smith's *English Flora* describes all British plants, but has no plates. There is no separate work on *Hybridizing*. Buy Smith's *Introduction to Physiological and Systematic Botany*. The above is in answer to a note from which the following is an extract. Its writer need never fear that we shall neglect his queries:—"I work in a factory all day; my garden is my relaxation; to the enjoyment I find there, I would add that to be derived from an acquaintance with the wild beauties of our fields and roadsides. You may infer, from my occupation, that I cannot afford very expensive books, but am one of those who would rather possess one containing sound information on its peculiar subject, and be content to wait till I can afford the others, than purchase an indifferent one because it is cheap."

GERANIUM LEAVES DISEASED (*B. W.*).—They have been scorched by exposure under glass to a bright sunshine without a free ventilation. Crushing the green fly on rose-buds does not injure the buds, but it is best to syringe them well afterwards, as this clears the pores.

HYBRID PURPLE LABURNUM (*T. W. E.*).—It is very common for this tree to bear some yellow blossoms. It is merely a sport, or variety; and all such sports will recur, more or less, to the parent colour.

CYRLOSTEGIA (*Llandillo*).—There is no such plant. It must be miswritten for *Cryptostegia grandiflora*. If you refer to *The Cottage Gardeners' Dictionary* you will find that it is a climbing stove evergreen, six feet high, producing pink flowers in June, that it is a native of India, and introduced here in 1818.

HYDRANGEA WITH BLUE FLOWERS (*Matilda*).—We are afraid that you will fail to produce blue flowers on your Hydrangea by watering it with nitrate of iron. Alum has been successfully employed for the purpose; but if you have our second volume you will find a full detail of Mr. Beaton's experience on the subject at page 243. If you have not the volume, buy our No. 45.

ROSES WITH GREEN CENTRES (*An Irish Subscriber*).—This arises, probably, from the soil being too wet and undrained, or too highly manured. In the moist climate of Ireland a more open and less rich soil is required for roses than in England.

ANTS IN GREENHOUSE (*A Young Gardener*).—If you only grow flowering plants in your greenhouse, why object to the ants? They are great destroyers of the green fly. Placing a little gas-lime over their haunts, and renewing it two or three times for a week, we have found drive them away.

EMIGRANTS TO AUSTRALIA (*Boston*).—Can any correspondent inform us for what sum Government are sending out emigrants to Australia; and if so, where an intending emigrant should apply.

AMERICAN BLIGHT (*A New Subscriber*).—Spirit of turpentine, applied by a brush to each spot, is the best remedy. *Tulips*, of any valued variety, should be taken up as soon as their leaves are dead, and their bulbs kept in a cold dry place.

BONES (*Himus*).—To reduce bones to lime (not phosphate of lime), they must be calcined; that is, reduced to a white powder by being heated red-hot for some time.

LISTS OF ORNAMENTAL PLANTS (*W.*).—We are attending to this subject.

FURNITURE OIL (*A Young Housekeeper*).—Bees-wax is the worst ingredient; it shews where every finger touches. The best preparation is one pint of linseed oil, two ozs. black rosin, and one oz. alkanet root (tied up in a little bag), heated together until well coloured.

GAS TAR (*Juvenis*).—This, employed in forming the concrete floor of a rabbit house, will not, we think, be injurious to young rabbits.

DISEASED APPLE TREES (*E. T. Y.*).—Your young trees are cankered and this arises probably, from your "heavy loam" being undrained. Although planted four years ago, we would take them up, and replant them *on* the soil, in stations prepared as Mr. Errington has often mentioned.

ASPARAGUS BEDS (*C. R. R.*).—Your compost is more than rich enough. Half earth, quarter old cow-dung, and quarter night-soil and road-scrapings in equal proportions, will be quite sufficiently fertile, for you must manure annually to keep up the fertility.

VINE INSECT (*Cuddesden*).—The insect infesting your out-door vine, is the vine scale (*Coccus vitus*), of which you can see a drawing and full particulars at page 260 of *The Cottage Gardeners' Dictionary*. Paint over the stem and branches with the following mixture—½ lb. soft soap, 1 lb. flowers of sulphur, ¼ oz. ground black pepper, and 4 gallons of water, boiled together for twenty minutes.

SUNDRIES (*J. L. P.*).—The fungi or toadstools in your hotbed cannot be kept away. We pour boiling water on them when we can do so without injuring the roots of the plants. There are hundreds of different species of "hairy caterpillars." There is no remedy but hand-picking against caterpillars rolled up in leaves. *Heracleum giganteum* is a biennial, and should be sown annually.

CATERPILLARS ON PEAR-TREES (*J. N. B.*).—Try dusting them with white hellebore powder.

NAMES OF PLANTS (*T. M. W.*).—Your "Macrantha rosea," is *Helichrysum macranthum roseum*. (*E. B. R.*).—Your plant is the female of the Perennial Mercury, *Mercurialis perennis*. It is poisonous. (*E. A.*).—No. 1. *Malva grossularifolia*, propagated by cuttings. No. 2. We believe is *Salvia Grahamii coccinea*, but are not certain. (*M. W. G.*).—Yours is not an Australian plant, but an English weed, introduced with the soil. It is one of the *Galiums* or Bed Straws. (*Sigma*).—*Saxifraga mutata* is used in bouquets; your plant is *Spiræa bella*.

BEES.—Will "A Country Curate," *not our usual correspondent in Herefordshire*," send us his address?

CALENDAR FOR JULY.

PLANT STOVE.

AIR, give most abundantly by day, and partially by night. AMARYLLIS BULBS that have done flowering, place in a cool house, to cause a state of rest. *Amaryllis* (Hippeastrum) *aulica*, pot, and plunge in heat. ACHIMENES PICTA, put into wide shallow pans, and start into growth. APHELANDRA AURANTIACA, pot and grow on, to flower in winter. BASKETS, any plant in, water freely, by dipping them in a cistern of well-aired water. BASKETS with drooping plants dip frequently. BEGONIAS, to flower in winter, repot and grow on freely. EUPHORBIA JACQUINIFOLIA, ERANTHEMUM STRICTUM, and ERANTHEMUM PULCHELLUM, require liberal treatment now, to cause them to bloom well in winter. BULBS done blooming, remove into a cool house, to induce rest. CLIMBERS, tie in, and keep clean from insects. CUTTINGS of various kinds of fast-rooting stove plants may be put in now successfully. CUTTINGS that are rooted, pot off, and shade for a few days. GLOXINIAS and GESNERAS done blooming, set out in the air in an open situation, to induce them to rest; lay the pots on one side to keep off heavy rain. GESNERA ZEBRINA, repot to bloom in winter. IXORAS, give the last potting for the season to such as are intended for specimens; tie down, to allow the young shoots to spring up in the centre; stop these, to cause bushiness. MOISTURE, supply to the internal air liberally. POINSETTIA PULCHERRIMA, pot and place in heat, to start into growth freely. PLANTS (young), remove as many as possible into cold frames early in the month; this gives them a stout hardy habit, and helps to keep down insects, especially the red spider. POTTING may yet be done for all freely-growing young plants. REST, give to all bulbous plants, and early flowering shrubby and herbaceous plants. SYRINGE, morning and evening, to keep down red spider, and to wash the dust off the leaves. WATER, apply in abundance to the freely-growing species, but withhold it from such as have made their annual growths. T. APPLEBY.

FLORISTS' FLOWERS.

AURICULAS and POLYANTHUSES, supply with water in dry weather; repot such as were not done in spring. CARNATIONS and PICOTEES, shade from sun, and shelter from wind and rain; layer them as soon as the shoots are long enough. CINERARIAS, put in slips of as cuttings; transplant seedlings. CALCEOLARIAS, treat similarily. CARYSANTHEMUMS, advance a stage by repotting. DAHLIAS, attend to tying; see the ties are not too tight; thin branches where too numerous; place traps to catch earwigs; look out for slugs, and if any are found water the ground with lime water; mulch freely, if not already done; and water abundantly in fine weather; put stakes to, if not done before. Cuttings put in of new and rare sorts; shelter the flowers when they open (See next month's Calendar). FUCHSIAS now in flower, supply liberally with water; repot such as require it. HOLLYHOCKS now advancing to flower, keep well tied to the stakes; mulch and water freely. HYACINTHS, take up, dry, and store. PANSIES, save seed from; layer; protect from adverse weather; put in cuttings; seedlings transplant where they are to flower. PELARGONIUMS, specimens of, cut down; give no water till they give over bleeding; put in cuttings; pot off those that have struck. PINKS, cut off decaying blooms; layer, and pipe—it is not yet too late. RANUNCULUSES, take up, dry, and store, e. ROSES, cut off all decaying flowers and flower-stems; destroy insects on, or the autumn bloom will be spoilt. TULIPS, take up, dry, and store, e. or b. WATER all florists' flowers in pots freely in dry weather. T. APPLEBY.

ORCHID HOUSE.

AIR may yet be given freely, and moisture in liberal supplies, by wetting the walls, walks, and pipes two or three times a day. BLOCKS, syringe daily, except such as may have ripened their pseudo-bulbs; remove such into a cooler and drier house. DENDROBES, continue to grow on for another month; water them abundantly. INSECTS breed fast during this month: apply the usual destroying remedy quickly and effectually. The white scale propagates the fastest of any of its class: wash the plants infested with it with a strong soap water worked into a lather, and laid on warm, but not hot. SYRINGE all the plants daily during the month, excepting it should prove cold and cloudy; let every part be kept neat and clean in every plant house. TOP-DRESSING; during this month go over all the plants, sponge the leaves, and top-dress such as require it. WATER freely all growing plants, but as soon as the new pseudo-bulbs are fully formed, withhold water, and place the plants in a cool house. T. APPLEBY.

FRUIT GARDEN.

APPLE ESPALIERS, train, thin, and stop. APRICOTS, pick off caterpillars, stop and train. CHERRIES, cleanse from fly and protect from birds, CUCUMBERS, thin and stop frequently, and reserve specimens for seed. CURRANTS (red and white), prune back all side spray and top. CURRANTS (black), water freely. FIGS, thin out the wood, and stop. GOOSEBERRIES, exterminate the caterpillar; thin out where bushes are overloaded. INSECTS of all kinds exterminate. MELONS, train, stop, thin, set fruit, and water freely when swelling the fruit; also syringe on fine afternoons. NECTARINES, as peaches. NUTS, remove superfluous spray from the interior of the bushes, also suckers. PEARS, remove waste shoots, stop, &c., according to advice previously given; thin fruit if too thick. PEACHES, make a final thinning of both fruit and wood; stop gross shoots wherever found. PLUMS, beware of the fly; stop, and thin. RASPBERRIES, thin suckers, and stop when more than five feet high. STRAWBERRIES, keep down runners, and water late kinds. VINES, remove extra laterals from those ripe, and continue stopping late grapes; water border, if dry and sound beneath, in dry weather. R. ERRINGTON.

FORCING HOUSE.

BORDERS, attend to. BOTTOM-HEATS, minimum 80°, maximum 90°. CHERRIES, secure from sudden changes, may sink gradually to rest; use a little liquid manure. CUCUMBERS, water and stop regularly; beware of insects. FLOORS, moisten twice a day. FIRES, try to forget at present. FIGS, be sure the root is moistened; stop every shoot when four or five inches. GRAPES ripening give abundance of air of a dry character; succession crops give air and moisture; thin, tie, train, stop, &c. INSECTS, continue to destroy. LIQUID-MANURE, apply where needed. MELONS, sustain the foliage for a second crop; proceed as before with very late ones. MOISTURE, ROOT, see well to; in air, should be well kept up, except with ripe fruit. NECTARINES, as Peaches; neglect will prove painful in the end. PEACHES, stop, train, and thin foliage, to colour fruit; late crops, apply liquid-manure. PINES, *fruiters*, use liquid-manure, clear; sustain a bottom-heat of 85°; shut up hot and moist. PINES, *successions*, frequently sprinkle; shift boldly when requisite, and air liberally, to keep them sturdy. VINES, young, train carefully, stop frequently, and apply liquid-manure, if moisture be needed. VENTILATION, forget not by day, and all night if possible; be not niggardly. WATERING, attend to constantly. R. ERRINGTON.

GREENHOUSE.

AIR, admit freely night and day, unless when stormy; make an exception, however, in those cases where growth is still desirable. There shut up early, and use the syringe morning and evening. BUD and GRAFT oranges, camellias, azaleas, climbers, &c. CINERARIAS, cut down, plant out-of-doors, or keep in pot, according as you wish to grow from suckers, or merely by thinning-out, or dividing the old plants when growth has commenced. CUTTINGS, make and plant, placing them in cool pits at a distance from the glass, or in a mild bottom-heat, according to their requirements. Dress and keep everything neat. CALCEOLARIAS, give manured water; fumigate when necessary; cut down early blooming; thin the pods of those left for seed, as one pod will give hundreds of plants. Fine kinds done flowering, cut down and plant in light soil, on a north border; sow seeds of these and Cinerarias to have them early; for moderate early blooming in spring, it will be time enough a month hence. GERANIUMS, cut down the forwardest; tie and train successions; prepare for early supply of cuttings; they will do better now stuck in an open border, than two months hence in pits or frames. HEATHS, cut down and prune when done flowering; give plenty of air to those in flower; shift those starting again after being pruned; and propagate by seeds and by cuttings in a pit under hand-glasses. Examine all PEAT PLANTS as respects water, for if dried up several times, death is next to certain; your only chance is to set the pot or tub in water until all is saturated, and then allow it to drain. All HARD-WOODED PLANTS must receive similar attention; the more sun they can stand now, the rougher and colder the treatment they will stand in winter. SEEDLINGS of all kinds prick off as soon as up, or they will be apt to *fox* off at the surface of the soil. SHADE when necessary, especially things not well rooted; it is better in bright weather than more air or delugings of waterings. SHIFTING must be attended to with all successions, such as fuchsias, geraniums, balsams, cockscombs, &c., and free-growing, quick-blooming plants, as *Achimenes patens* and *coccinea*. *Tropæolums*, and other twiners and climbers, must be trained and fastened daily. One of the prettiest ornaments for a window is the *Tropæolum pentaphyllum*; when done flowering, keep bulbs in dry earth until they vegetate. WATER must now be given with great judgment, especially to newly shifted plants that have been transferred from a small to a large pot. In general circumstances, there is now as much danger from want of water as in winter there was the danger of giving too much, and giving it when not required. All bulbs that have finished flowering and growing are an exception; as soon as the leaves get yellow, they should be encouraged to get into a state of rest as soon as possible by withholding water. Those that have their leaves yet green should be assisted with water until the bulbs are mature. R. FISH.

FLOWER-GARDEN.

ANNUALS (Tender), bring out from frames; dress; give fresh earth; stake and tie. ANNUALS, sow for autumn; transplant generally. AURICULAS in pots, dress and water judiciously; seedlings transplant; old plants repot, e. BOX edgings clip, b. BUD roses, jasmines, &c. BULBOUS ROOTS, take up (see June); seeds, sow. CARNATIONS, attend to (see June); shade and shelter during hot weather; water freely, and give liquid-manure. CHRYSANTHEMUM suckers separate and plant; layer. CUTTINGS of most herbaceous plants will root now, and of all the scarlet geraniums, if planted on a south border; b. DAHLIAS require support and pruning. EDGINGS, clip. EVERGREENS, prune; seedlings, prick out. FLOWER-BEDS, stir surface often; train; stop and often regulate the plants, to get an uniform growth and bloom. GRASS, mow and roll often. GRAVEL, weed and roll. HEARTSEASE, plant slips, e.; water freely. HEDGES, clip. HOE and rake at every opportunity. LAYERING carnations, &c., may be performed, b; water freely; transplant rooted layers. LEAVES, decayed, remove as soon as seen. LIQUID-MANURE, give occasionally to flowering shrubs. MIGNONETTE, and a few other quick-flowering annuals, may be sown, b., for autumn. PIPING of pinks, &c., may be still practised, b. PELARGONIUMS, cuttings, plant, b. POLYANTHUSES, seedlings, transplant; roots of old, part. ROSES, bud, layer, and make cuttings of, b. SEEDS, gather as they ripen. STAKE and tie up plants wherever necessary. TRANSPLANT, b., from the reserve garden in damp or dull weather. WATER freely, not only the roots, but over the foliage. D. BEATON.

KITCHEN GARDEN.

ALEXANDERS, earth up in dry weather. ARTICHOKES, attend to. ASPARAGUS, discontinue cutting; keep clean from weeds. If salting has been attended to, none will appear; but earth-stir with some pointed instrument. BEETS, see that these are well thinned out; use the hoe freely. BROAD BEANS, save seed from the best kinds; a small planting may be made of the *Early Mazagan* kind in an open south border, and well watered at the time of planting, should the weather be dry. BORAGE, sow, and thin out a foot apart. BORECOLES, plant out and prick out; in all cases well water at the time of planting. BROCOLIS, treat the same. CABBAGES, plant out; sow seed about the 20th of the month, in an open situation; should the weather be dry, well water previously to sowing. CAPSICUMS, earth-stir among frequently. CARDOONS, attend to earthing-up, &c. CARRAWAY, collect seed, &c. CARROTS, see that all are well thinned out, and use the hoe freely among them. CAULIFLOWERS, plant out; supply those that are forward in growth with plenty of water; invert a few leaves over the heads of those turning in. CELERY, plant out in earnest, and attend to earthing-up forward crops, and look after seed as it ripens. CHAMOMILE, keep clear from weeds, and collect flowers. CUCUMBERS, attend to daily as to thinning, topping, training out, top-dressing, and watering. The hand-glass crops, fork up the earth round about their roots, allowing them sufficient room to run out freely. ENDIVE, of both sorts, make a good sowing toward the middle of this month, and plant out previously sown plants. GARLIC and SHALLOTS, take up and dry off for winter use. HERBS of any kind, cut and dry when in bloom. KIDNEY BEANS (dwarfs), at this late season, should be sown in open, warm borders. KNOTTED or SWEET MARJORAM, attend to earth stirring. LEEKS, plant out, b. LETTUCES, sow or plant out, tie up in succession, and seed look after. MELONS, attend to earthing-up late planted-out crops; do such work in the afternoon; shut up close; setting the fruit is best done about 10 or 11 o'clock in the forenoon; give plenty of air to those ripening off their fruit; be sparing of the water among the ripening fruit. ONIONS, well thin out, weed, and earth-stir; press down stiff-necked onions as they advance in growth. PARSNIPS, use the hoe freely. PEAS, at this late season, sow early kinds in warm situations; well water at the time of sowing in dry weather; save seed from the best favourite kinds. In all kinds of PLANTING-OUT, take advantage of dull weather, and water well at the time of planting. Make good use of THE HOE in dry weather, in cutting down weeds and earth-stirring. We never like to see the rake used much in the kitchen-garden. RADISHES, sow where required. SALSAFY and SCORZONERA, thin out, and hoe among, b. SAVOYS, plant out. SEEDS of all kinds look after, and collect as they ripen. SPINACH, sow in succession and thin out. SWEET BASIL, earth stir among. TURNIPS, sow in succession, and attend to thinning-out; and use the hoe freely among them. Particularly attend to planting out this month; water, and use the hoe. VEGETABLE MARROWS, train out and thin out. T. WEAVER.

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WEEKLY CALENDAR.

M D	W D	JULY 1—7, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
1	TH	Corn-Saw-wort flowers.	30.005 — 29.899	78—59	E.	1.18	49 a. 3	17 a. 8	rises.	☺	3 31	183
2	F	Thorough-Wax flowers.	29.988 — 29.851	65—63	N.E.	—	50	18	9 a 20	15	3 42	184
3	S	Dog Days begin.	30.021 — 30.013	66—52	N.E.	—	51	17	10 1	16	3 53	185
4	SUN	4 SUNDAY AFTER TRINITY.	30.027 — 30.011	67—37	N.E.	—	51	17	10 31	17	4 4	186
5	M	Blue-Bottle flowers.	30.021 — 29.975	75—45	N.	—	52	17	10 55	18	4 14	187
6	TU	Old Midsummer Day.	30.058 — 30.050	74—50	N.W.	—	53	16	11 14	19	4 24	188
7	W	Little Field-Madder flowers.	30.051 — 29.903	75—55	N.W.	—	54	16	11 32	20	4 34	189

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 75° and 52.5° respectively. The greatest heat, 95°, occurred on the 5th in 1846; and the lowest cold, 37°, on the 1st in 1837. During the period 106 days were fine, and on 69 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

(*Continued from p.* 171.)

TROLLIUS. GLOBE FLOWER.

GENERIC CHARACTER.—*Calyx* none. *Petals* several, inferior, uncertain in number, from five to fifteen, roundish, concave, curved in, deciduous. *Nectaries* from five to ten, or more, shorter than the petals, narrow, flattened, incurved, with a single lip; their base somewhat tubular. *Stamens* numerous, filaments bristle-shaped, shorter than the corolla. *Anthers* terminal, numerous, erect. *Germens* superior, numerous, stalkless, columnar. *Pistils* styleless. *Stigmas* pointed, spreading, shorter than the stamens. *Seed-pods* (*follicles*), as many as the germens, cylindrical, pointed, curved back, collected into a round head. *Seeds* several, at the edges of the capsule, ovate, smooth, somewhat triangular.

TROLLIUS EUROPÆUS: European or Mountain Globe Flower; Gowlans; Lucken-Gowan (that is Cabbage Daisy) in Scotland; Globe Ranunculus; Globe Crowfoot.

Description.—Root perennial, fibrous, and black. *Stem* about eighteen inches high, upright, cylindrical, hollow, leafy, and branched at the top. *Leaves* in many gashed lobes, pinnatifid, smooth; the root-leaves on long footstalks; all saw-toothed on the outer edge, but nearly entire on the inner; stem leaves nearly stalkless, alternate. *Flowers* of a globe form, petals about fifteen, yellow. *Nectaries* narrow, scarcely half so long as the petals, and of the same colour. *Stamens* linear, anthers curved in. *Capsules*, more than thirty, nearly cylindrical, curved in, ribbed lengthwise, one-celled, ending in a crooked horn pointing outwards, and giving the head, into which the capsules are collected, a star-like form. *Seeds*, above twelve in each capsule, small, angular, black, and shining.

Places where found. — In shady, mountainous, moistish situations. Not uncommon in our northern counties.

Time of flowering.—May and June.

History.—The young villagers of some of our northern counties, as well as those of Scotland and Sweden, make this a festival-flower. In Westmoreland, about the beginning of June, the young of both sexes gather it with accompanying festivities, returning with it in the evening to form into wreaths and garlands to adorn their doors and cottages. Allan Ramsay makes the young laird tell Edinburgh Katy—

> We'll gae to some burn-side to play,
> And gathers flowers to busk ye'r brow:
> We'll pou the daisies on the green,
> The *Lucken-Gowan* frae the bog.

It seems to have been first known to our London herbalists in 1581, for during that year, Chusius relates that he saw it there newly brought from the mountains in the north. Parkinson says, that "in the northern counties, where it groweth plentifully, it is called *Locker goulons.*" Its name of *Trollius* is merely a latin termination given by Gesner to the German word *trol*, which means round or globular, alluding to the form of the flower. Its herbage and roots are slightly acrid, and cause inflammation. (*Smith. Martyn. Withering. Parkinson.*)

WE look upon the preservation of the Crystal Palace for the purpose of establishing a vast garden for the people, as one of the most important steps towards the improvement of our national horticulture taken during the present century. With the exception of Kew Gardens, there is nothing, at present existing, at all approaching it in design or capacity for extensive usefulness; and it will as far excel Kew Gardens, as these excel all others within the realm for usefulness and interest.

That the public are as sanguine as ourselves in a high estimate of the value of such an establishment, is vouched for by the fact, that no fewer than *one million-and-a-half shares* were applied for, being fifteen times as many as there were to be distributed. We said, on a former occasion, that one hundred and fifty thousand shares were applied for, but that statement originated in the omission of a rather influential cipher by our informant, who wrote 150,000, instead of 1,500,000!

The gardens of the Horticultural Society at Chiswick, and of the Botanic Society in Regent's Park, effect a certain modicum of good among their own members, but to the public at large, to all those who can neither afford some guineas a year, nor five shillings for a few hours overlooking of assembled excellencies, they are sealed places. To remove such a deficiency—to enable

the million who can afford a shilling to see good gardening in *all* its departments—to say nothing of the other arts—the Crystal Palace is about to be established. To use the phrase of the most energetic of its friends, "It will be an illustration of The Cottage Gardener." Any one, without asking any other one's leave, may enter the grounds, see growing the plant of which he has read, and may then and there judge for himself of its habit, its culture, and the soil in which it will flourish. Within the three hundred acres which have been purchased, including the Annerley Arms, and other localities which might have led to a transgression of the rule against the use of intoxicating liquors in the gardens, will be found illustrations of some of the best features of landscape, border, and shrubbery gardening; whilst within its glass structures will be all that can be effected in the stove, greenhouse, and conservatory. To the last, especially, on a most gigantic scale, will attention be paid, so that even in the depth of winter there will be a vast garden under glass, entirely without that dangerous, and at all seasons oppressive, heat which renders the Palm-house at Kew a place of punishment as well as of pleasure.

At one time we felt regret that the Crystal Palace was not established in the vicinity of Chiswick, not so much because we thought it might have stimulated the Horticultural Society into better gardening, but because we thought that it would there best secure those two desirable circumstances—powerful patronage and easy access. Narrowly did the Crystal Palace escape being there located. Parties who could and would at once have placed it there, were only one day too late in coming forward as its purchasers; and even after it had passed into the hands of the present possessors, tempting offers came to them from Chiswick and from the South Western Railway, to induce them to change the locality to that aristocratic neighbourhood. Further consideration, however, had convinced the purchasers that Sydenham was to be preferred, for that, whilst it would be equally easy of access as Chiswick to all, it would be more easy of access to its best patrons—the majority of the people. "Sydenham," says one of its ablest friends, "combines pure air and beautiful scenery, with *maximum* accessibility. It is within fifteen minutes of the London Bridge Terminus, through which 6,000,000 of suburban passengers already pass annually." "There were persons connected with the Great Exhibition who predicted, only a week before it opened, that the *maximum* traffic would be 3000 per day—the actual average was 43,000. Mr. Fuller predicted a receipt of £500,000, and the actual receipt was £506,000. The same authority estimates the return of the Crystal Palace Company at 30 per cent., and that Brighton shares will go up to 120. No doubt this is but a guess, but who so competent to guess as he who before guessed right?"

We have nothing to do—nothing to influence us—in the jousting which is now proceeding as to whether the Brighton Railway shareholders should bestir themselves and sanction an outlay to prosper such an undertaking. One "John Small," either with ideas equivalent to his assumed name, or with cunning equally deserving of it, has opposed the employment of that effort and outlay; but we cannot think that the shareholders will be misled by his "cautions," since we are told that the South Western Railway offered some tens of thousands of pounds to have the Crystal Palace located on their line, and that the secretary of this railway corrected the proofs of the pamphlet! So far as we are personally concerned, we should prefer having it on the South-Western line, but for the sake of the "million," we throw in our vote in favour of Sydenham; and the more readily, because we would have no impediment placed in the way of Francis Fuller, Esq., and those other energetic gentlemen who have made such progress in its establishment, and whose judgment and power is evidenced by their having "raised £500,000 to perpetuate it in all its glory, and secured the names of Paxton, Fox, Wyatt, and Owen Jones, to the back of the bill which they have drawn upon public confidence, as a guarantee that the large amount raised shall be well spent, and the national undertaking nobly carried out."

FORSYTH MSS.

Balloon ascents are now so common that it is rather extraordinary if one or more of the certainly-not-wise men who thus fruitlessly jeopardize their lives are not dashed to pieces during each year. There was a time, however, some three-quarters of a century since, when it was an occurrence deemed so incredible for any one to travel through the air, that, as a contemporary wrote,

> "The multitude scarcely believed that a man
> With his senses about him could form such a plan;
> And thought that as Bedlam was so very nigh,
> You had better been there than turned loose in the sky."

The travelling among the clouds to which these lines allude, was that of Vincent Lunardi, in 1784. Of this he published a narrative in that year, entitled, *An account of the first aërial voyage in Britain, in a series of letters to his guardian, the Chevalier Gherardo Compagni.*

The balloon descended in a field near Colliers End, in the parish of Standon, Herts, on the left of the high road from London to Cambridge, where is a stone, bearing on a copper-plate an inscription, of which the following is a portion—

> "Let posterity know, and knowing be astonished, that on the 15th of September, 1784, *Vincent Lunardi*, of Lucca, in Tuscany, the first aërial traveller in Britain, mounting from the Artillery ground in London, traversing the regions of the air for two hours and fifteen minutes, on this spot revisited the earth."

Mr. Baker, then a neighbouring magistrate, residing at Bayfordbury, caused this monument to be erected, and actually took depositions on oath of those who witnessed Lunardi's descent.

The following letter, headed "Bayfordbury, Mr. Baker's," is among the Forsyth MSS., and, although without a date, evidently states particulars of this voyage. Lunardi, at the time, was secretary here to the Neapolitan Legation. He died of a decline, on the

31st of July, 1806, in the convent of Barbadinas, at Lisbon.

M. VINCENT LUNARDI TO DR. FORDYCE.

This evening I shall be at your house, about ten o'clock. The obligations I profess to you are beyond any expression. I have been up in the air two hours and twenty minutes. The oars did answer according to my expectation; I was able to keep myself three-quarters of an hour, or about fifty minutes, at the level of 50° of the thermometer, which I find to be the happiest situation. I went up as high as the freezing, 32°; and the water which did drop from the neck of the balloon was a piece of ice; then I began to work again with my oar (having lost one), and I descended. When I was an eighth of a mile from the earth, I called to a parcel of farmers with the speaking trumpet; they answered to any question. I then touched the ground; left in their care my little cat; and I promised them to go out of sight. I remained on the ground at anchor two minutes. I let off great quantity of ballast, and ascended about four miles perpendicular; the thermometer at 29°. I went at that level a few miles, and I began to descend. When I was a mile from the earth, I began to work with my oar, and endeavoured to descend in an open field, about twenty yards from a large tree, against off which I could keep the balloon, having thrown down my anchor. Then I thought proper to let out all the air and parcel the balloon, which I send to you, and by the bearer, it may, if you please, be put into M. Biggren's room. My compliments to the young ladies.

GOSSIP.

A first authority, who visited Taunton on the 10th of last month, for the purpose of seeing the *Exhibition of the Bath and West of England Agricultural Society* reports that "its poultry department was a failure, for with the exception of a few pens of game fowl, there was not a good pen of poultry." We shall, therefore, not occupy our pages by reporting the awards. The following remarks upon the *Cochin China* variety, which we borrow from *The Western Luminary's* report of the show, will be read with interest:—

"This extraordinary fowl, weighing from ten to twelve pounds, has been one of the latest importations from the eastern part of the Asiatic continent—a locality which, there is little doubt has been the principal, if not the only district, that has supplied us with that most important auxiliary to the dining-table—the domestic fowl.

"We have used the names 'Cochin China' and 'Shanghae' as synonyms; for we must confess we have been unable to find out any marks of distinction between them, which would be sufficient to stamp each as a distinct variety. The first birds of the breed to which our attention is directed, were brought to the Queen's aviary, and were called the "Cochin-China;" while a gentleman of Hampshire—Mr. Samuel Moody—who was also one of the earliest introducers, having received his birds from Shanghae, called them naturally by the latter name. Shanghae is, as is well known, one of the most northern ports with which we trade in his Celestial Majesty's dominions, and is situated about 31° N. lat., while Cochin China is a country about one-third larger than the British islands, and ranges from about 9° to about 23° N. lat. Now it is quite possible that birds of this kind may have been imported from both countries, and as there has long been a trade carried on between the Chinese and Cochin-Chinese, either country may have imported them from the other.

"We know, moreover, from parties who some years ago resided at Adelaide, that birds of large size, feathered-legs, and possessing all the main features of these birds, were brought from Singapore to that port; so that, years ago, they were in the very southern part of the Malay peninsula. On the other hand, we are informed that at Shanghae they are known by the name of *Loo-choos*—the name of a group of islands lying some six or eight degrees off the channel coast. It would appear, from these circumstances, that they have been pretty generally distributed over the Eastern coast of Asia for some years, and that to establish their original habitat would now be no easy matter. This fact will also in some measure account for the many imperfect specimens, or impurely bred birds, which have been brought home, a fact well known to the best judges. More especially is this likely to happen if the birds are from Southern ports, as we know this is the district of that better known variety—the Malay. The birds, therefore, from Shanghae, we should, from the above reasoning, infer to be most likely of the purest blood, and we should on this account prefer the name given to them by Mr. Moody; though perhaps a more general name would be better still. To divide them, however, into two classes, is decidedly a mistake, as no sufficient marks exist to establish them as distinct varieties. The two names best known in connection with this bird, are those of Mr. Punchard and Mr. Sturgeon. How the former gentleman became possessed of them we do not know; the latter, we understand, had them from some ship-captain, and afterwards his were crossed into the blood of Mr. Moody's. If we are rightly informed, the latter gentleman has been one of the oldest possessors of these fowls, but from his never having exhibited, his name, unlike the others, has not become associated with their history.

"It is to be exceedingly regretted that, as yet, no sound and *reasonable* laws have been laid down on which to decide the superiority of this species of *stock*. The many faults which have been urged—and we think justly—against the decisions of the Rev. Mr. Dixon and other judges, show us that no generally acknowledged *criteria* have yet been established, and, until such are formed and made the basis of all decisions, there will always exist this discontent, giving us after each exhibition its mutterings 'low but deep.' We will venture here to state, that the fact of putting the dark black-red variety out of court, merely because of their colour, though they may be the heaviest and the finest in every point besides, is one of the greatest absurdities that could be perpetrated. If, indeed, a fowl, like a flower, were merely to look at—a thing of fancy alone—without possessing useful qualities—then there might be some show of sense in the arrangement; but when the contrary is the principle upon which *Fowls* are kept and cultivated—utility, and then beauty, being the sequence of merit, at least in the great majority of instances, we think that any man's *dictum*, setting up a particular colour beyond another particular colour, and which is equally as natural to the race, and combined with which are generally found the largest and best developed forms, should be put down as inconsistent with common sense. However, we rejoice to hear that men are not to be long kept under such absurd regulations, at least in the West of England, and that here we shall have prizes for dark birds as well as light."

It is *The National Tulip Show* that will be held at Nottingham next year, and not the *Birmingham Poultry Show*, as we erroneously stated at page 158. It is not intended that the latter exhibition shall be moved in any year from Birmingham.

At a late meeting of the Edinburgh Botanical Society, Mr. M'Nab read a paper *On the Transmission of Foreign Seeds in Soil and Sphagnum.*

"This experiment was fully tested by himself during 1834, when he brought over the seeds of many of the rarer American Oaks and other trees in boxes filled with soil, while portions of the same kinds of seeds packed, both in brown paper and cloth bags, were in many instances totally useless.

"The method he adopted for the American tree seeds, was as follows:—He purchased several strong deal boxes about 14 inches in diameter, and made of ¾-inch wood. He afterwards procured a quantity of soil taken from a depth of 8 or 10 inches under the surface so as to possess only a natural dampness. A layer of the soil 2 inches deep was placed on the bottom of the boxes, above which a layer of seeds was distributed; another layer of soil and then seed, and so on till the boxes were full; the whole was pressed

very firmly down, when the lids were nailed on, allowing no possible room to shake about. When they reached Edinburgh, December, 1834, the seeds and soil were sown over the surface of shallow pans and boxes. During the following spring they grew freely, while of those brought home in the paper and cloth bags, comparatively few of the varieties grew, the Acorns being without an exception perforated with insects. The kinds which grew were from four to five weeks later of vegetating than those brought home in soil. Acorns brought home in a box of sphagnum moss, after the superfluous moisture had been wrung from it, were equally successful with those in soil.

"During the summer of 1851, Mr. M'Nab induced his brother, Dr. M'Nab, of Kingston, Jamaica, to send a box of West Indian fruits and seeds, to be put up as described, and which he dispatched during the month of August, containing seeds of the following:—Granadilla, Gourds, Forbidden fruit, Shaddocks, Sweet sop, Sour sop, Cherimoyer, Sapota, Guava, Lignum vitæ, Papaw, Alligator Pear, Mango, Ochra, Fustic, &c. The box reached Edinburgh last October; shortly afterwards, the seeds and soil were sown over the surface of boxes prepared with drainage and soil for the purpose. During the month of January the surface of the boxes became covered with innumerable specimens of cucurbitaceous and other herbaceous plants; when about three inches high they were removed, and again the surface became covered with ochra, Papaw trees, &c.; and now the different species of Anona, Citrus, Lignum-vitæ, besides several of the stronger hard-wooded sorts are making their appearance. It would be very desirable, in all cases where seeds are transmitted in soil, to have small portions of each named and sent in paper; many of the seeds could thus be picked from the soil, and identified before sowing. This, however, is only applicable to the larger fruits and seeds, while with the smaller ones, dried specimens would be the only way to identify them."

Two of the boxes were exhibited to the meeting, and the luxuriant growth of seedling plants which they contained bore unmistakeable evidence of the success of the mode recommended by Mr. M'Nab.

The following was contained in a letter we lately received from Boughton Kingdon, Esq., of Exeter, and contains unmistakeable evidence of the high value of pure and superior *Cochin China fowls*:—

"I see that in The Cottage Gardener (page 173) you insert a notice from a correspondent relative to the sale of Cochin China fowls, and, perhaps, the following *facts* will interest him and others. Within the last few weeks, a gentleman, near London, has sold a pair for 30 guineas, and another pair for 32 guineas. He has been offered £20 for a single hen; has sold numerous eggs at one guinea each, and has been paid down for chickens just hatched, 12 guineas the half dozen, to be delivered at a month old. One amateur alone has paid upwards of £100 for stock birds. These are facts which quite throw your correspondent's into the shade."

Information such as this gives us very great pleasure, not because of the high prices, but because it shows the energy with which poultry are being cultivated—an energy which must result in the improvement of what ought to be part of the stock of every householder who has a few square yards of ground attached to his residence, either in town or country.

With much regret we have to announce the death of *William Gardiner*, the Dundee Botanist, in whose behalf we made an appeal some weeks since. He died on the 21st of June. We hope soon to see the 4th edition of the first series of his *Mosses*, and we trust that it will sell largely, for the benefit of his little orphan boy.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Allendale, Sept. 11th. (*Secs.*, G. Dickinson and G. J. French.)
Barton-upon-Humber. First show 14th July. (*Sec.* C. Ball.)
Bath, July 29th; Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)
Bridgewater, Sept. 22. (*Secs.*, Mr. J. Leaker and Mr. J. Hayward.)
Brigg, July 7th, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
Bury St. Edmunds, July 30 (Picotees); Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
Caledonian (Inverleith Row), Edinburgh, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, Aug. 26.
Chiswick, July 10.
Clapham, July 8, Sept. 11.
Colchester and East Essex, Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Derby, Aug. 4.
Durham, Sept. 8.
Forfarshire (Eastern), July 21 (Brechin); Sept. 15 (Arbroath).
Hampshire, July 1 (Winchester), Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hampton Wick, July 1. (*Sec.* Mr. B. Regester.)
Hexham, Sept. 15, 16.
Hull, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), Sept. 9.
Lewes Grand National, July 14 and 15.
Lincoln, July 27, Sept. 14.
Liverpool, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), July 13†, 27, Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Maidstone. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), July 9, Sept. 10.
Newbury, Sept. 3.
North London, Sept. 14; Nov. 23, Chrysanthemum.
Northampton, July 27, Carnation; Sept. 27, Dahlia.
Oxfordshire (Royal), July 29; Sept. 23. (*Secs.*, C. Tawney, and W. Undershell, Esqrs.)
Peebleshire, July 13th, Sept. 14th. (*Sec.*, J. Stirling.)
Ponteland (Newcastle-upon-Tyne), July 14; Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)
South Devon Botanical and Horticultural, July 13; Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), July 15†, 21, Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, Aug. 6, Sept. 17.
Whitehaven, July 9, Pinks; Sept. 17, Dahlias.

POULTRY SHOWS.

Agricultural Society (Royal), Lewes, July 12.
Birmingham and Midland Counties, 14th, 15th, 16th, and 17th December.
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).
Cornwall (Penzance), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)

† For seedlings only.

PRUNING VINES.

(*Continued from page* 125.)

The Spur System.—It will be remembered, that we carried the young vines through the first season's culture, up to the rest period, at which point we resume the subject. We will assume that the rafters are required

to be complete in four years, and thus matters will stand in the following position.—*First summer:* a cane produced, reaching to the back of the house, or nearly so, and pruned back the first winter to about half its length. *Second summer:* the cane again extending to the back of the house (at which point it is immediately pinched), and in the mean time the lower half, or first year's wood, developing its spurs, each of which is intended to form a permanent source of fruit shoots for years. The *third summer:* the cane having been shortened to about a foot from the back of the house, the lower half will be in full bearing, and the upper half developing its portion of spurs; and the *fourth summer*, the whole cane complete, in full bearing, from one end to the other, with a mathematical regularity.

Now this is the plan we should take in establishing a vinery intended to stand the test of many years, and to produce first-rate fruit without taxing the vital powers of the tree.

It is much to be feared, however, that the patience of many persons would be exhausted in the procedure; they would think it hard that the second season's side developments could not be allowed to bear, "only just to carry a few bunches," a consummation so long desired. We do not dispute the possibility—nay, in some cases, its eligibility—but merely advise as to what we should term first-rate practice.

It is often the case with vines, on the spur system, that some of the spurs, although rightly placed with regard to distance, position, &c., are much weaker than the others, especially if permitted to bear during the season of their development. Now, by the plan here suggested, all such difficulties may be obviated; the finger and thumb plied according to those principles which promote equalisation of strength, can set all right, beyond the control of any future disturbing causes. To come more to the point, we will suppose that the young canes, after being pruned in November, and dressed according to practice, have had a winter's rest; have undergone a depression of temperature, say, on the average, 36° to 50°; if occasionally a *little* frost, so much the better. But here we may observe, that severe frosts are sometimes very injurious to vines, especially if in a succulent and immature condition; we would never, if possible, permit them to undergo more than half a dozen degrees.

Fermenting material was before adverted to; and if a heat of 70° to 80° can be maintained on the border—commencing in the middle of February, and removed entirely in the beginning of June—it will doubtless facilitate their free rooting; they will, however, do very well without at first. The young vines may be suffered to break according to their natural habit, and the leading shoot will now speedily acquire a great degree of luxuriance, if the root be all right. The side-shoots, which are to form the spurs, will progressively develop also; those near the point first, and thus in order towards the front of the house. The leader, the while, must be carefully trained for fear of any accident, for a breakage here would cause a sad blemish for some time. Those who are jealous of any accident may encourage double leaders for awhile, as they frequently push two. As soon as the side-shoots have developed about five or six eyes, they may be stopped, in order to enlarge and strengthen the principal leaves, and concentrate much growth-matter around the base of each shoot. Next in order, the extending leader, pushing forth axillary shoots, will require attention.

Our younger readers will here understand that, like the germ in the seed of the broad bean, and, indeed, many other seeds, our gracious Creator has ordained at least a couple of buds, obviously in order to provide against a contingency. This, what some men term "a lucky accident," we regard as carrying the marks of design—marks, it need scarcely be observed, impressed on all created things. Well, then, under a luxuriant condition one of these buds will burst forth, and proves a safety-valve to the other—another "lucky accident." The main business, henceforth, with all such waste shoots, is to pinch them so as to render them subservient to the main points at issue. And what are the main points? Why, by a well-ordered and somewhat restrained amount of growth, so to economise the rampant propensities of this excitable tree, as to induce a fruitful habit, combined with soundness of constitution.

Now we must back to the side-spurs, which will soon be found sporting amain. As soon as, by two or three weeks' rambling, they are found to be getting into disorder, the finger-and-thumb must go to work again. Thus, through the whole summer may stopping be practised with the laterals, the only maxim being to let them continue producing a joint or two between the stoppings, taking care all the time that not a leaf of the inferior shoots shades the principal leaves—in fact, always making late growths give way to early ones whenever a necessity arises.

The leader having reached the back of the house, must be pinched, and the laterals in this portion of the tree must be frequently pinched also; suffering one or two at the summit to ramble rather more freely, which will encourage a liberal root action. Thus will matters proceed until about the first week in September; after which, we would not suffer a shoot to continue growing unless for some express purpose, or in the event of the vines having done badly, when some latitude may be allowed in these things. It should be here well understood by the Tyro in vine culture, why late growths should *not* be encouraged, seeing that the trees are full of vigour, and anxious to be extending. The fact is, that the conditions existing in Britain, in the autumnal months, are not precisely the same as those in the native climes of the vine. Where vines bring forth their produce in the very highest perfection in the open air, they are for the most part liable to extreme droughts in the autumn. This, with a burning sun, producing an extremely dry state of atmosphere, throws the plant naturally into a quiet and unexcited state; the ascent of the fluid is almost stopped, and the sure consequence is an amount of solidification in the wood scarcely known in northern climes. This latter condition is what practical men term "*ripening the wood*," and the neglect of this is productive of various defects.

In Britain, therefore, it is a fair presumption that all growths, after our best sunlight has departed, take more from the system of the tree than they return, besides impeding the ripening of the wood. It will be proper, in early autumn, to commence a removal, by pinching, of the spray which has been produced, and this is a procedure requiring caution. The spur-shoots may first be handled, just slipping away any laterals which impede the light, in order to render the buds for the next year's fruit-crop plump. Like disbudding, this is best done in a progressive way, removing a few weekly; and by the middle of October little will be left but the principal, or first-formed leaves, which should now be turning yellow.

If these vines are intended for a system of forcing, we advise that the border, if outside, be covered nearly a foot in depth with any half-decomposed manurial matters—such as tree leaves, hotbed linings not exhausted, half-spent tan, &c. This material we would place on the border in the end of September, to arrest the departing warmth of the soil, and to keep out frost. If such be in a somewhat fresh condition, so much the better, and it will in that case do to work up with hot manure in January, to produce fermentation in the mass.

We have now carried the vines through the second year; and, as many enquiries continue to be made about

vines, an early opportunity will be taken of carrying the subject farther out, when we will say something about the long-rod system. R. Errington.

(*To be continued.*)

FRUITS AT THE CHISWICK SHOW, JUNE 12TH.

The *Pines*, although respectable, were by no means remarkable, considering the advanced period of the season, and the perfection to which pine-culture has recently been brought. Mr. Collinson's 10 lb. 8oz. fruit was of course a noble one; but we noticed one or two rather "pinched" in the middle; a circumstance which points to a slight imperfection in the fruit, and derogatory of its beauty.

The *Melons*, in which there was some variety, were tolerably fine as to appearance; the flavour of course we could not ascertain; but we were glad to see Mr. Collinson's green-flesh Egyptian preferred before others of much more splendid exterior; shewing that the judges were, as they ought to be, ruled by the flavour, instead of size, appearance, or novelty, in this most important section.

The Black Hambro' *Grapes* were good, but not by any means extraordinary; the berries being rather small for exhibition articles. They were very well coloured, but not perfectly so; and, perhaps, the season is to blame. Mr. Lush's Black Prince grapes were very fine fruit; and had Mr. Turnbull's Muscats been thoroughly ripe, they would have been capital specimens for the period.

In *Peaches* there were some fine dishes for June; but the *Nectarines* possessed, we think, more merit. The *Figs* were nothing extraordinary; but in *Strawberries* there were some capital British Queens; one basket, indeed a noble pile. Strawberries in pots had two competitors, and those by Mr. Smith, market-gardener, were specimens of good culture.

On the whole, then, the fruit, although respectable for the season, were not remarkable, and not good exponents to a stranger or foreigner of the highest perfection of British fruit-culture. We should like to see fruit, at such exhibitions, as much superior to what may be found in Covent Garden market, as the specimen-plants on the exhibition tables are to the market, or to our nursery establishments; but this is not by any means the case. We can scarcely divine how it happens that the amount of fruit is not more extensive. Surely, there is no want of interest on the part of the public; a fact sufficiently evinced by the constant pressure at this portion of the tents. It is extremely difficult for the reporter to get a peep at them; and if a slight inaccuracy should occasionally occur, it is no marvel. We should like to see the amount quadrupled at least, feeling assured that nothing could add more to the glory of the tents, and the satisfaction and pleasure of the visitors. And why not plenty of *Cherries?* as also of *Raspberries, Currants, Gooseberries*, &c.? Why not all possible forcing be encouraged and represented? We really thought to have seen huge trained specimens of grapes in pots; a practice which many amateurs take much delight and interest in. There can be little doubt, that as orchard-houses are in the ascendant, the interest in fruits will be much increased; and it behoves the committees of our societies to take the lead, by giving more importance and significance to this interesting subject.

THE JUNE EXHIBITIONS.

Too much of a good thing is almost as bad as too little; and two large exhibitions in one week is an exemplification of the adage. Having so experienced it myself, I shall be more lenient to my readers by combining what I intend to say of both on this occasion. After the soaking through and through at "the Park," my frame was not in a fit condition to try another squeeze at the narrow gate at Chiswick, so I went over to Mr. Montgomery's saw-mills at Brentford, to see the new machinery by which he prepares sash-bars, styles, &c., for hothouses, pits, and frames; but having only time to say that those who intend building hothouses ought to consult him before they close a contract, I go on to say how agreeably I was surprised to find the narrow gate done away with at the Chiswick Garden, and an entrance fit for her Majesty to pass through put up in its place, with ample accommodation for any sudden push that might occur, as did at the May show. I hope this favourable impression will not be thought to influence my private opinion of the plants and arrangement, or of any other thing that I shall have occasion to notice.

The first tent on the right, where the roses stood last May, was filled with well-grown *Calceolarias* and *Heaths*—just the style of heath-growing which an amateur ought to aim at. It is all very well for our first-rate gardeners to show the world, that all the world, or all the gardeners in the world put together, cannot compete with them in this branch of plant-culture; but there is not one amateur out of a thousand who could keep one of the monster bushes of heaths alive for one month in the summer season. There was one good plain yellow Calceolaria, called *Attraction;* a red one, named *Joe Miller;* and a third, a purple one, *Cleopatra*; the rest were spotted on various ground colours. All these were of the size that I would recommend amateurs to imitate, judging from what one sees at these exhibitions. *Erica Cavendishii*, with splendid yellow flowers and an upright growth; *E. depressa*, a fine yellow one, with a spreading and drooping growth; all the varieties of *E. ventricosa* and *E. elegans*, a dense low glaucous sort, with a powdery hue on the dull red pink blossoms, must be the easiest to manage for summer show, as every heath grower is sure to have them in his stand. *Cavendishii*, I recollect, was the first that they exhibited some years as a single specimen of good growth, when heath-growing was in the balance; some maintaining that they could not be grown in England at all; but our gold medals and the inflexibility of the judges soon disproved the assertion.

This brings me to a point which I wish seriously, and with the best possible feeling, to recommend to the councils of the two great societies, and that is to do away altogether with giving prizes for *single specimens of plants* that have been under cultivation for some years, because I see quite clearly that that stimulus is not now required; and when a good thing is accomplished why not use this prize for some other department? The lowest grade in London gardening at the present day, and the one that is most highly desired in the country by the great patrons of gardening, is that which, by either forcing or retarding, can bring up a host of well-grown plants in bloom at a season not natural for them to be in flower. Moss Roses on Christmas Day, and Chrysanthemums at a July exhibition, may not be easy of attainment; but apply the stimulus which is now wasted on specimen plants, and you may rely on it that March and April flowering plants will be brought up in full condition in May and June; and that those never seen in flower except in August and September, will be ready at our July fêtes. We have pines and grapes all the year round, peaches and nectarines from the end of March to near Christmas, and why not Luculias from October to May? But, let us first make a start with the principle, and leave the selection of subjects to individual efforts without a stop or hindrance. There is one class of specimens that I would still keep open prizes

for—very fine and very rare plants like Mr. Veitch's *Hexacentras mysorensis* and *Medinilla magnifica*, as exhibited last May. Here I know I shall be met with such objections as encouraging purse-gardening, but I have been too long on the boards to be caught in a trap. You encourage purse-gardening already; and at every show, for the last ten years, when you give a prize to the smallest morsel of a "rare plant," you even do a great deal worse, for before anybody is at all aware of the capabilities of your rarities, you stamp them with an importance which future experience often proves to have been most mischievous, because you put our teeth on edge; and, however light our purses, we cannot withstand the temptation of letting a season or two pass before we purchase that which, perchance, may disappoint us the very first season. But keep your medals until it can be shown at your exhibitions that new plants are really capable of being grown into good specimens, and that will save us our three half-sovereigns and our vexations to the bargain; and before a new plant can be grown to the size required, its possessor will be able to propagate a good stock of it, and that will enable him both to warrant it, irrespective of your awards, and sell it cheaper with more profit to himself.

The plant at the Chiswick Show, on the 12th of June, which attracted most attention among gardeners, was an orchid, a new *Cattleya*, belonging to the same section as *Crispa*, or it might be a *Lælia;* for the difference between the *Cattleyas* and *Lælias* being in the number of the pollen masses, without examining the column where the pollen is found, it is not easy to determine to which genus it belongs. I shall not attempt to describe this beautiful orchid, because Mr. Appleby was there; and all the writers in The Cottage Gardener allow him to be the best hand at this tribe, because he has been a successful grower of them for many years, and now has the sole charge of the best collection of them on sale anywhere; and thus has a better opportunity than any of us of knowing what is best and newest among them.

From this I went to the collections of the Messrs. Veitch, where we all expect the greatest novelties. Here I found the *Saxgothea conspicua* and *Fitzroyea patagonica*, two of the best and newest hardy evergreens of the season, and I am glad to say they are on sale already, and not at all dear for such rarities. *Saxgothea* has much of the aspect of a yew, with a more upright way of growing; and *Fitzroyea* looks as if it was a cross between some kind of Cypress and one of the more rare Junipers. Both seem to be free growers, Fitzroyea particularly so, as anybody might see from the way the leaders droop, as in the Deodar and Evergreen Cypress; always a sure sign of fast growth in Conifers. Beside them was a beautiful new white *Rhododendron*, called *alba multiflora*. Their *Pitcher plants* were in the most luxuriant health, and were very much spoken of. There were six of them which were sent to Exeter as varieties of *Sanguineum*, but five of them only appeared to me to belong to one species, and they had no disposition to climb about like the sixth plant, and like the old one, *Nepenthes distillatoria*, but were quite dwarf, and so far are better suited for the low stove of the amateur. The size and colour of the pitcher are the great points of attraction in these curious plants; the colour is from greenish brown to real brown and purplish brown, and one of them would hold more whisky than it would be safe for any Scotchman to drink.

After them was a beautiful *Aerides*, called *roseum*, in the way of *maculosum*, and another *Aerides* without a second name, just after the same style; but I see that *Aerides maculosum* and *affine* have sported very much into varieties; and if we could but rear them and many others from seeds, we should find that they are as free to sport as the Calceolarias. Without waiting for this, however, we see them sporting under the influence of ordinary cultivation, and I can quote from this very collection. A fine large plant of the lovely *Dendrobium Devonianum* had two of the shoots covered all over with flowers twice the usual size, but in all other respects, as to the exquisite fringes, the lace-like intermixture of the soft and charming colours, and the lady-like appearance of the whole flower, there was not a shade of difference. In two or three years we shall have this on sale as *Dendrobium Devonensissimum*, or *magnificum*, or, perhaps, simply *Devonensis grandiflorum!* *Aerides Schroderii* and *Aerides Larpentæ* are only two of the forms assumed by *affine* or *crispum*. There was also a small gem, called *Saccolabium curvifolium*, with a loose spike of deep orange blossom, the individual flowers being quite small. The best *Saccolabium* shown this season was *guttatum*, by Mr. Williams, gardener to C. B. Warner, Esq., at the Regent's Park; and one of the best orchids there and at Chiswick, was *Vanda Batemanii*, shown by Mr. Lawrence. This plant looks the strongest-growing of all the Vandas; you could hardly clasp the thickest part of the stem in your hand; from the body of this stem, and not far from the pot, the flower-stem comes out, and darts up as straight as an arrow, and at the bottom is as thick as a waggoner's whip handle; then it diminishes all the way up, just like a whip four feet long; and all the way up it is studded with drooping flowers, so that you see the backs of them first, and you might almost suppose the drooping was on purpose for you to see the best part of the flower first, which is all over of a colour between scarlet and purple; inside it is streaked or barred with purple markings, on a yellowish ground, and the end of the lip is richly tinged like the back; altogether this is a noble thing, and any one who has read Mr. Bateman's large work on the Orchids of Central America, will not grudge the name. *Cœlogyne Lowii*, named after a respected friend, the Colonial Secretary at Labuan, who found it in Borneo, and *Angræcum suavis*, were the next newest orchids, but neither of them are first-rate. The Borneo flower is a dull mixture of buff and brown; the other is green and white. To make up for them, we had immense specimens of *Aerides odoratum*, and large plants of such fine things as *A. affine*, *purpurascens*, and *crispum; Cattleya mossiæ intermedia*, of which the best variety yet seen was in a beautiful collection sent by E. B. Ker, Esq., an enthusiastic admirer of this family, who bids fair to rise, step by step, like Mr. Schröder, instead of laying out a whole fortune at once to get at the top of the ladder of fame by the weight of his purse. There is far more to be learned from the "rise and progress" of this class of useful amateurs, than from all the elephantine growers put together; because, after once knowing their plants, you can see their annual progress from year to year, and compare that with your own efforts at home. You can also learn more from their conversation, because they know the turning points, and the ups and downs of every plant they grow, almost from the cradle; whereas, some of the great growers are as unconscious of the difficulties about the earlier stages of their huge specimens as I am of how to rear them from seeds. *Dendrobium cretaceum*, though not very new, has, hitherto, not been much seen in public; he must, therefore, have a special introduction. The stems are of medium size, upright, and bare of leaves; while in flower, the flowers are about the same size and shape as those of *pulchellum*, and of a faintish white colour all over, therefore not much to boast of. Mr. Green, the great prize-fighter, or, rather, the great prize-taker for many years, must have heard of my complaints at the absence of *Oncidium lanceanum* from the May shows, for at both the June ones he had an enormous plant of it, quite big enough to make four plants for ordinary growers, and it was in

splendid bloom. If ever there is a shy plant, or one very difficult to keep and grow well, Mr. Green is sure to come out with it after everybody else had nearly forgotten it, and, better still, he never keeps his plan a secret, but writes a plain and full account of it in some periodical, just as we do in The Cottage Gardener, so that they all may try their luck again. The thick and broad-leaved Cactus, *Epiphyllum crenatum grandiflorum*, which puzzled me so much at the Regent's Park Show, was from him. I knew so much of the family, that I was quite sure it could not possibly be a cross seedling, and I never knew any of them sport away like this, and we all know that botanists in our times do not outrage the world with such mongrel names. A puzzle like this haunts me so, even in bed, that I cannot sleep until I find out a clue to unravel it. This cactus, at which we all gaped, and which we took to be so new, has been long in England, though only in the hands of those who introduced it from the wilds of Central America. It turns out to be a genuine wild species, never yet recorded in books. There are many stout cross seedlings from it in the country by the pollen of *speciosissimus*, but not of a flowering age; and Mr. Green had it all the way from Herefordshire, where it is found to be as hardy and as easy to manage as the old *speciosa* in the cottage windows. Open a regular siege on the nurseries, and we shall soon get this fine addition to Mr. Fish's department, which I highly recommend. *Crenatum* is nothing to it, except in flower; but no cross breeder need take it in hand, for it is in the hands of one of the best of them as it is, and he will do wonders with it, and has done so, although we took it for a new plant. *Cattleya citrina* is another orchid which is seldom seen at exhibitions; though an old plant, it is one of the loveliest of the genus, with large pure yellow flowers, which are very sweet. It is one of those little Alpine plants from the higher ranges of the orchid tribe in Mexico, and requires only greenhouse heat, except just while making its annual growth, and, like *Oncidium bicolor*, from like situations, rejoices in the full glare of the summer's sun. *Acineta Barkerii*, a yellow flower, and free bloomer, seems an easy one to grow, but is not often seen; it was here in very good bloom, but is, on the whole, a second-rate plant. *Maxillaria tenuifolia*, a small, and often a despised plant, was at the Chiswick show really in very good order, and when seen in that state is not at all to be overlooked; it is one of the commonest of the whole order in Mexico, and I have seen it introduced in such quantities as would thatch a cottage. The once *Maxillaria aromatica*, but now a *Lycaste*, with its yellow flowers, was near it, and ought to be in every collection, on account of its delicious cinnamon smell; indeed, it ought to be grown for cut-flowers for the market, as everyone likes the smell of it. *Epidendrum longipetalum* was new to me; it is one of the best of the small flowering ones, of which there seems to be no end of the species; the sepals and petals spread open like a star, their colour is chiefly brown, and the lip is light at the bottom, and yellow in the broadest part; all this class have green, smooth bulbs, with two leaves from the top, and they stand the full sun when well established. Of the section of *Dendrobium*, in which the lip is formed into a pouch like the bottom of a calceolaria, *densiflorum* and *moschatum* are the two most often seen. The former is pure yellow, and very rich indeed, producing dense spikes of large flowers; the other is a soft yellow, with the throat or mouth of the pouch well marked with purple, as you often see in the common sorts of calceolarias.

There was a full collection of *variegated plants* from Mr. Rollinson, of Tooting, of which *Maranta alba lineata*, and *Maranta lineata rosea*, with *Cypripedium Javanicum* were the very best. The Cypriped belongs to the section of *barbatum*, the ground colour of the leaves a glaucous or greyish green, marked irregularly with bars of a dark green. Of this I never saw the flowers, but without them the plant is exceedingly interesting.

Talking about novelties and interesting plants, there was one in this collection which surprised every person at the show at Chiswick. Nothing has ever been seen in London like the leaf of it; you might call it a hand-plant or a duck's-foot-plant, but the semblance in the hand-plant of Mexico is nothing to it; that of the rays in passion-flowers is nothing to it also; neither can the figures of ghosts, fairies, and hobgoblins presented by the orchid-tribe, be likened to it; for it puts them and us all to the blush, that we should think of such things when more strange appearances, as in this instance, come before us unawares. The name of the plant is *Philodendron pertusum* (from *phileo*, to love, and *dendron*, a tree; delighting to embrace the nearest tree with its long fleshy aerial roots to support itself, like a great Pothos, for an epiphytal kind of life); yet its affinity is not with Pothos, but rather with the great Arads, as *Colocasia*, *Caladium*, and even *Arum* itself; and *pertusum* means to break, or slit through. Here we have a visible meaning in every syllable in these names; long fibred stems rise from large fleshy acrid roots, the leaves so large and heavy that the roots cannot support them, great roots come out all the way up, to mend matters, and fasten themselves around the largest trees in the Brazilian forests, and as the name expresses it, they glory in their support. Such large leaves, so high up in air, would run the risk of being torn to shreds by the violence of the tornado, were it not for a provision of nature which secures them in their aerial position; this provision gives the meaning of *pertusum*, the blade of the leaf, which is somewhat in the form of a horse-shoe, and more than a foot through each way, being slit up from the front into fourteen divisions, like so many fingers, or rather like so many toes on the web-foot of some monster bird, and what is left whole of the web is bored through, leaving large holes of no definite shape; so that, though the leaf is as big as I said, with these slits and holes, the wind has not power to do them harm, let them reach ever so high among the trees and branches; nevertheless, the plant can be grown, and *pertusum* exemplified in less space than that required by a specimen geranium; and to prove the whole, I advise everyone who has a stove to get hold of this most singularly-leaved plant as soon as he can, and whoever wishes to draw it out in its natural beauty and proportions, will only have to plant it out against the back-wall of the house, in very rich soil, to keep the soil as wet as a swamp while the plant is growing, to syringe it every time he enters the house in fine weather, and if he never saw an orchid, he can understand from this *Philodendron* how they put forth their roots into the air for nourishment and support.

D. Beaton.

HARD WOODED PLANTS.

Acacia grandis.—Were we confined to growing two of this genus of New Holland plants, we would fix upon this and the *Acacia armata*. Could we have no more than *one*, then there would be the difficulty of deciding, *armata* being as striking from its golden blossoms, and dark, mossy-green foliage, as *grandis* is distinguished by its light green, finely-divided, airy foliage, and its dense masses of globular, orange-yellow flowers. For a huge plant in a tub, or for covering the wall of a conservatory, commend us to *armata*; for a neat specimen in a pot, ranging in size from six to sixteen inches, I would give the preference to *grandis*. We are indebted for this graceful plant to New Holland, whence, also, have come all the species that are fitted for the greenhouse, and those still hardier that rejoice in the protection of a conservative wall.

Though *grandis* is generally spoken of as blooming in spring, it might almost be described as a constant bloomer. In a house whose average lowest temperature seldom falls below 45°, and there should be a fair amount of sunshine, it will bloom profusely all the winter, and will continue to do so also in spring and early summer. Its compact habit, gracefulness, and free flowering, will render it a universal favourite. Those who wish to have it had better obtain a nice little plant from the nursery, as it may now be easily got; then it may be grown freely. Our own experience leads to the conclusion that it does not grow fast at first, and that there is a particular period when it propagates by cuttings best, more likely to be known by the mercantile tradesman than the young amateur. Let us merely glance at a few features of cultivation.

Propagation.—By seeds when these can be obtained. Soak in warm water twenty-four hours before sowing, and plunge in a gentle moist heat; or sow the seeds as they are taken from the pod, and before they are thoroughly hardened, but in this latter case be careful that the seeds are sown in earth not *wet*.

The time for getting good *cuttings* will be when fresh growth is taking place, after you have slightly pruned, by removing flower-stalks, &c. The free blooming renders cutting-getting a matter of some research; but at most times, in narrowly examining the plant, you will find some nice little shoots, neither hard nor soft, but the medium between the two, and from half-an-inch to three inches in length; these, taken off close to the stem, will make admirable cuttings, and should be inserted in silver sand, over sandy peat, and covered with a bell-glass; treated as carefully as for heaths, kept in an average temperature of 50° by night, with a rise of 10° for sunshine, and enough shade to keep them from flagging, and no more. The glass should be tilted a little at night to prevent damping. After the base of the cutting swells, a little bottom-heat will hasten the process of rooting.

Potting.—Whether in the case of cuttings or seedlings, this should not be delayed after there are plenty of roots. The *Soil*, at first, should be sandy peat, with a little broken pots and charcoal; and the pots small, or several plants round the sides of a five-inch pot. In progressive shifting, a little leaf-mould, and very fibry loam may be added, which will have a tendency to render the growth more compact; but at all times it will be found that the plant will do best with the chief part of the soil consisting of peat.

Temperature.—This has been indicated, but when bloom is not wanted, or it is desirable to keep it back, it will be uninjured at from 35° to 40°; but it will thrive better with from 5° to 10° more. When kept long in a low heat great care must be taken of the watering-pot, so as not to give too much. When growing freely, and well-drained, it can scarcely be over-watered after March, though, of course, the weather must regulate that. It may safely be set out of doors, in a shady place in summer, after the wood is made and hardening.

Insects.—The red spider is apt to seize on its delicate foliage. We have not yet seen a white scale on it, but that will very likely be a visitor ere long. Cleanliness is the best guardian against both. Washing and smothering will be the best remedy for the last; sulphur-fumes, syringing with clean water, and syringing with water in which lime and suphur have been blended, and allowed to stand until clear, are the best remedies for the first.

Acrophyllum venosum (*Synonyme verticillatum*).—There is always profit as well as pleasure when those engaged in the same object have an opportunity of personally comparing notes. The last meeting of the staff of The Cottage Gardener will not soon be forgotten by them. Writing the word *Synonyme* alone brought forcibly to my recollection what our friend Mr. Weaver said about the importance of giving synonymes. The deficiency in that respect will in a pet work, no doubt, be at least partially met, ere long, by a Supplement, along with corrections of errors, and an index of new plants. It also reminds me that the beautiful plant named above is also known under the name of *Weinmannia venosa*,—in that case being commemorative of J. W. Weinmann.

The name *Acrophyllum* is very appropriate, from words signifying the leaves at the top, as the leaves are chiefly produced on the branches above the flowers; these, in their spikes, are very beautiful, of a light pinkish colour, and appear altogether more like the *Spiræa frutex* than any common plant I know. The leaves have a considerable amount of carmine mixed with the green, are saw-edged, and so hard and stiff as to resemble the Banksian family more than the Saxifrage alliance, to which the plant by its flowers belongs. When I grew it it was under the old name, and I found it no easy matter to strike it, even when cuttings were procurable. It is not even now at all very common, though a plant of it seldom appears at an exhibition table without its attracting those best judges of floral beauty—the ladies. There must, therefore, be little demand for it, or it is propagated not very easily. The following hints are from recollection.

Propagation.—Any time during summer, young shoots, two or three inches in length, getting firm at their base, should be slipped off close to the stem, and inserted in silver sand, under a bell-glass. Young shoots rising from the roots, or the base of the stem, generally, when obtainable, make the best cuttings. The cuttings may be kept in a shady place, in a temperature not below 50°, and shaded only to prevent flagging, with air admitted at night to prevent drawing and damping. In *potting*, drainage must be particularly attended to. The *soil* should be open, and yet in such small pieces as to admit of going firmly together. Compost, three parts peat, one of turfy loam, and one of equal portions of charcoal, small pebbles, and broken pots.

Temperature and position.—An airy place at all times, when the plant is growing, seldom below 45° in winter, and kept in an open airy situation in summer, the pot defended from the sun if out-of-doors, or the plant altogether kept on the front shelf of a greenhouse, where it can have plenty of light and a free current of air. I prefer the last position.

Adenandra fragrans.—This plant will always command attention when well grown, owing to the numbers of pinkish flowers it produces. Many of our readers may be better conversant with it as a *Diosma*.

Its *propagation* is easy. The best time, if it blooms early, is to have short half-ripened shoots, from one-inch-and-a-half to two inches in length, which are soon produced after it has been pruned. This pruning should take place by removing all the flower-heads, &c., as soon as they begin to fade. If kept back, as respects flowering time, a few young shoots may generally be procured for cuttings. They merely require planting in sand, under a bell-glass, and care taken by an airy atmosphere outside of the glass, and tilting it a little at night, to prevent damping. Similar treatment to the *Diosma* will afterwards suit it.

Soil.—Open and turfy, mostly sandy peat at first, and increasing the loam until it constitutes nearly one-half, as the plant comes to fill an eight or twelve-inch pot. *Temperature* from 35° to 45° in winter, a sheltered, airy position out-of-doors in summer; or fully exposed, as respects the top of the plant, in a light airy greenhouse. If placed out of doors, house it again by the middle of September.

Aotus gracillimus.—This is a beautiful slender shrub, with abundance of small, pea-shaped, yellowish

and crimson blossoms, that, under common greenhouse treatment, bloom freely in spring and early summer. Like some near neighbours, the habit is so slender, that if not looked after, the plant would get what is termed *leggy;* but this, in a large specimen, may be easily guarded against by frequent stopping, and tying the lowest shoots down to the ring round the rim of the pot. It will, no doubt, be easily propagated by seeds; and considering the ease with which seeds may be obtained from similar New Holland shrubs, it is full time our hybridists turned their attention to the pea-blooming groups. Mr. Beaton lately told us the meaning of *A* when placed before some words, and here it is used in the same subtractive manner. Thus *otus* would have been *eared;* Aotus, without ears, having reference to the appearance of the calyx.

Cuttings are easily obtained from this plant, as, while the shoots are blooming, they also continue growing freely at their points, so that half-ripened cuttings from these may easily be procured in April and May. Inserted under a bell-glass in a cool pit, they will soon root. About equal portions peat and loam will suit it, and enough of charcoal and broken pots to keep the whole mass open. When stubby plants are required, the plants should be liberally pruned after blooming; and to expedite the forming of young shoots, it will be advisable to shorten flowering-shoots when they begin to bloom, by nipping out their points. Instead, then, of making growth, which would in most cases require to be removed, the strength of the plant would be given to swelling the buds nearer to the base, to which you wish to cut back. After pruning, keep close, until fresh growth has taken place; then repot if necessary; keep close again; then expose to sun and air; house by the end of September; and if there is plenty of room, keep in an airy place in-doors all summer, though the plants will not be injured if out of doors from June to September, if well-drained, watered, and guarded from storms.

R. Fish.

Error.—Page 128, 1st col., 5th line from top, for "*sixpence,*" read "*six shillings and sixpence.*"

FLORISTS' FLOWERS AT CHISWICK.

June 12.

On this occasion the exhibition of florists' flowers was exceedingly interesting, especially in two classes of flowers, namely, the *Pansies* and the *Pinks*. The once-thought impossibility of bringing roses in pots to the exhibition has been triumphantly overcome, so much so, that we may assert, without fear of contradiction, that larger and more perfect blooms of roses have been shown in pots than ever were exhibited in stands of cut flowers; and as the cultivators have been so successful with roses, there is no reason why they should not be equally so with other flowers, and pansies in particular. This flower, indeed, has made some progress already as a pot plant. We reported, at the last exhibition in May, a fine stand of well-grown and finely-bloomed pansies in pots, from Mr. Turner, of Slough, and the same grower sent another stand on the 12th, equal, if not better, than on that occasion. Mr. Bragg, of the same place, also sent a stand in very good order. We noted the following as being flowers of first-rate properties—*Fanny Irby*, dark eye, yellow ground, with a rim of rich blue, surrounded with dark crimson; good form and substance; size medium; a beautiful gem. *Euphemia*, yellow ground, dark blotch, broad white line round it, with purple margin; large size; form and substance good; a fine variety. *Jubilee*, yellow ground, dark yellow eye, margin purple-maroon; good form. *Adela*, yellow self, with a dark eye; good form. *Thisbe*, a bronze flower of good properties. *Aurora*, a light flower, excellent form and substance, and *Blue Perfection*, similarly good.

Pinks in Pots.—There was a stand of twelve, exhibited by Mr. Wilmer, of Sudbury, in good order. The plants were healthy and well grown, with numerous flowers on each plant, being another proof what skill and perseverance can effect. They looked remarkably neat and handsome, and exhibited a good lesson to the amateur of what can be done with the pink in pots, and we hope to see this worthy example imitated in future largely. The following were the best—*Jenny Lind*, Holmes' *Coronation*, *Lady Mildmay*, *Princess Royal*, *Lord John Russell*, *Lady Rivers*, Norman's *Henry Steers*, Ibblet's *Jenny Lind*, Wilmer's *Sudbury Hero*, and *King of Purples*.

There was a beautiful stand of fifty cut Ranunculuses, from Tyso and Sons, of Wallingford. The following were noted as being excellent—*Flamingo*, *Gipsy*, Kilgeour's *Queen*, *Dido*, *Herald*, *Burns*, Kilgeour's *Princess*, *Gomez*, *Horatio*, *Lady Cathcart*, and *Tete Nocturnum*.

Roses in Pots.—These were in better order than at the Park. The following are additions to our former report—*Paul Ricaut*, a dark hybrid Bourbon; *Lady Alice Peel*, *Magna Rosa*, *Goubalt*, *Borbot*, *Brennus*, *Pauline*, *Plantier*, and *Pactole*.

Pelargoniums.—The collections of this effective exhibition plant were numerous. They occupied a large tent entirely. The following were the best in addition to such as we have already noted at the May shows—*Ambassador*, deep crimson; *Delicatissima Purpurea*, dark crimson, shaded with purple; *Pearl*, a good white, with small blotch; *Constance*, light; *Enchantress*, excellent form and substance; *Ganymede*, a new variety, of excellent form, upper petals dark maroon, edged with crimson, white eye, lower petal a rich rose; *Diadem*, dark upper petals, white eye, lower petals a dark rich rose, an excellent variety; and *Bertha*, a white, with small dark spot, lower petal a pleasing salmon colour. The above are all worthy of being in every collection.

Fancy Pelargoniums.—Ayres's *Celestial*, a fine variety, a great improvement on *Anais; Mignon*, dark, a well-formed flower; *Purity*, a delicate, handsome variety. Mr. Ayres, of Blackheath, offered a prize of a piece of plate value five guineas, for six plants of fancy geraniums, sent out by him in the autumn of 1851. The prize was adjudged to Mr. Robinson, of Thames Bank, Pimlico, for *Advance*, *Formossissima*, *Gipsy Queen*, *Miranda*, *Caliban*, and *Conspicuum*. They were all neat, well-grown, and finely-bloomed plants, and the kinds are all desirable.

Seedlings.—Very few seedlings were exhibited, and for the very simple and sufficient reason, that the society does not give prizes for them. There was a seedling *Fuchsia* named *Model*, which is a superior variety; beautifully reflexed; sepals, broad, and of the richest crimson; corolla, a fine deep purple; size, large; a free bloomer. This will be sought after by the connoisseur. There were two others, named respectively *Grandis*, a large flower, but not reflexed sufficiently; and *Perfection*, not so good as "Model." A *Petunia* named *Pilot*, from Mr. Gadd, was a good large flower; rose, veined with dark maroon; a superior variety; of fine form and substance.

In *Fancy Pelargoniums* there was a seedling named *Jane*, of considerable merit, but it only had one bloom expanded. We hope to see this again; dark blotch broadly edged with white; the centre white; surrounded by a rim of dark maroon; form and substance good.

The plant that attracted the greatest attention, and unqualified admiration was an orchid, named *Cattleya purpurata* (though we believe it to be a *Lœlia*), from Messrs. Backhouse, of York. The plant itself, when out of bloom, might very easily be mistaken for *Cattleya crispa*, or a broad-leaved variety of that fine species. The flowers are produced from the top of the pseudo-

bulbs; the sepals and petals are of moderate size, inclined to reflex; they are white, delicately tinged with rose in streaks; but it is the labellum, or lip that is so truly magnificent. The flowers are quite four inches long; the throat is a clear yellow, beautifully streaked with rich brown; this colour, and the stripes, terminate in an even line just where the labellum begins to expand; the rest is of a rich crimson-purple, with a shade of white in the centre; the edges are flat, and without any fringe; this part measures nearly three inches across at the widest part, altogether forming a truly splendid flower. It is one of the finest of orchids, and was imported from St. Catherine's, in the Brazils. There were two plants exhibited, and we understood they comprised the whole stock. The same gentleman sent a new *Saccolabium*, named *crassifolium*, which was, we believe, purchased at the sale of J. Blandy, Esq., of Reading. Though the flowers were small, they were numerously produced on a single spike, with nine branches on it. Though not so conspicuous as the Lælia, it is nevertheless a very interesting and curious plant.

T. Appleby.

CONIFERÆ.

(*Continued from page* 165.)

Arrangement and Planting.—The extent of the pinetum being determined upon, the ground duly trenched, and exposed for several months to become improved and pulverised by the weather, the next point is to procure the plants. These may either be purchased at some nursery at the time, or may be procured some two or three years previously, and nursed, by either repotting them, or by planting them out thinly in rows in a part of the ground, which ground should be fenced so closely that hares and rabbits cannot have access to them. If this previous training or nursing is practised, much smaller, and conseqnently cheaper, plants may be purchased. This course is much to be commended, for plants so treated have their roots more spread abroad, and are not so much coiled in the pots as they must necessarily be in public nurseries, however carefully managed. Besides, there is less danger from removal, because a few at a time need only be taken up, and those few planted immediately before any more are disturbed.

Arrangement.—This is a very important point, and requires a knowledge of the habit of each plant. Nothing is so annoying as to find, after several years' growth, that the trees are encroaching upon each other; and, if not timely cut down, the lower branches will have grown and spread so far that they will begin to interlace each other, and thus soon die, and so injure the general contour and character of each other. Better is it by far to be content with a smaller number, and arrange them at the first so as to allow plenty of space for them to display their several characteristics naturally, without crowding too thickly upon the ground. If the situation is much exposed, it may be advisable to plant what are called nurses, to protect and shelter the more costly and beautiful species. The best kinds for nurses are, for high situations, the common Scotch fir, and, for lower, the equally common Spruce fir. In order to arrange them properly, there should be either a plan of the piece of ground, or a book, if it be large, with a portion of the ground drawn on each leaf—the book so folded that each successive portion drawn on each page should join that which precedes it; then, having previously ascertained the probable diameter the branches of each tree intended to stand alone when the nurses are removed will occupy, mark the exact spot on the plan where the stem of the permanent tree is to be, place a number on that spot, and let that number be entered in another book, with the name opposite to it; and so proceed till a place is arranged for all the trees or shrubs intended to remain in after the nurses are cut down. In order to observe the beauty of each tree so arranged, walks should be formed so that the spectator might walk comfortably and dry through the whole pinetum.

If game abounds on the estate, each tree should be protected from their ravages by a circular wire trellis, high enough to prevent them from leaping over to feed upon the young and tender shoots, or on the bark. Or, what would be infinitely preferable, a wire fence should surround the entire site of the pinetum. This, though expensive at the first, will be found the best and most satisfactory protection. All this arrangement and protection having been properly and effectively attended to, and the season for planting having arrived, then proceed to put in the plants, irrespective of their size at the time, in their proper places, as indicated on the plan. By this methodical arrangement there will be no difficulty or hesitation at the time.

It was mentioned that March is the best month to plant Coniferæ in, and the reason given was that the roots will then be ready to start into action and growth. Now, if the ground is in good order, and the plants have made their annual growth, and it is thought desirable they may be planted early in the month of August, for there will then be heat enough in the atmosphere, and in the ground, to cause them to strike fresh roots before the autumnal rains and cold nights set in, and these fresh roots will keep the sap slowly moving through the dreary season of winter, and the plants will be ready to start into growth as soon as the genial days of spring arrive. But never plant in winter, or even so late as the middle of September, especially in the more northern parts of Great Britain

Planting.—The great point to attend to in planting, whether the plants are turned out of pots, or planted from the nursery row, is to gently disentangle the roots, and spread them out equally on every side. In dry, hilly situations, the plants should be planted quite level, the upper roots being covered about two inches; but in lower grounds they should be elevated a little above the level, the roots being covered the same depth. If planted in March, in hilly localities, it will even be desirable to leave a little hollow round each tree to hold the spring rains longer about the roots; these hollows to be filled up early in the following autumn. But if planted in August, it is better to give a good watering, if the weather is dry, and fill up the holes quite level. We have a great horror of retaining moisture close to a tree during winter; it can do no good, and will certainly do harm if a wet autumn and winter succeeds the planting season. After the permanent trees are all planted, then put in the nurses, if desirable, on account of the situation being bleak and exposed; but be sure and remove them as soon as the permanent trees are fairly established. These nurse trees may be planted as the proprietor pleases, but they should never be nearer to the permanent trees than seven or eight feet, even in the most exposed situations; but in such situations no doubt they will be useful, and consequently desirable. The only thing, we repeat, is to remove them in time; they will make excellent fire-wood, or even stakes, or they may be used to plant out in situations far removed from the site of the pinetum.

T. Appleby.

(*To be continued.*)

GLASS FOR FORCING PITS, &c.

It is not without some degree of reluctance that we venture on this fertile subject of contention; and it is only at the request of a correspondent, whose case we believe to be a common one, that we enter this hitherto unsatisfactory field of controversy, on a subject of the

most vital importance to that class of produce which some are pleased to say forms the criterion by which good or bad cultivation may be known. Whether this be entirely true or not, we do not here pretend to say; assuredly it is partly so, as the more a plant is forwarded or hastened on, so as to arrive at that maturity we call ripeness, at an earlier period than it otherwise would, the more it becomes an object of artificial treatment, and consequently the more credit is due to the means taken to preserve it in health, vigour, and perfection; and, as every one knows that heat and light are the two principal agents by which a satisfactory result is accomplished, let us see in which way the latter of these is affected by the means now adopted to secure the former; as every one must know that glass is used not as an agent of light, which the best of it partly excludes, but as a covering which confines the imparted heat with the least possible diminution of that other all-important element "light."

If this doctrine holds good in all cases, it would appear that the description of glass which admits the unobstructed rays of the sun with the greatest facility must be the best for the welfare of all plants enjoying the sunshine of their native places: by this we mean that all plants, from tropical or even continental countries of the same latitude with our own, where the unclouded summer's sun shines on them for days or weeks together, ought never to suffer from receiving too much in this country; yet they certainly do suffer, and that to an extent that calls for every inquiry as to whether it is anything inherent in the sun's rays, as we have them; or whether those rays be not altered in their properties before they reach the plant in question. That the latter is the case we fully believe, and will here endeavour to state our reasons for that belief.

It is a well-established fact that the heat and light we derive from the sun is imparted to us in parallel rays of more or less intensity, according to the state of the atmosphere through which they force their way, as also whether they fall obliquely on the body on which they act. Now, this mode of applying warmth to the earth differs widely from the best regulated heated contrivance that human ingenuity can devise; the heat from the latter ascending, instead of descending, is more likely to try every chink in the roof or upper portion of the structure to effect its escape, rather than commingle with the earth or bed forming the floor of the house. But we are digressing, and must return to our text; and as we have accompanied the sun's rays to where they alight on a glass roof, let us see in what way they are likely to be altered in their transmission through the transparent substance which forms the roof of a forcing house. This is an important question, as altered they certainly are in many (if not all) cases, and to such an extent do they differ in some instances as to be next to ruinous to all plants cultivated beneath some kinds of glass, unless particular care be taken to counteract their baneful influences: and much of this is due to the article "glass."

Some years ago, when the removal of the duty on glass took place, the increased demand for that article for a time kept up its price beyond its just value. By-and-by, however, the supply became equal to the demand, and prices receded, but not until a large quantity of a very inferior kind had found its way into the English market from our enterprising Belgic and German neighbours, and no inconsiderable quantity of this spurious article was also supplied by our own manufacturers, tempted, as they were, by being able for a time to sell everything they could make. But the day of reckoning came, and long and loud were the complaints made against the badness of the new-fashioned sheet-glass, as it was called; this, of course, led to the introduction of a better article, but those who had the misfortune to use the inferior kind, felt but little consoled at being told they must ventilate more freely, in order to avoid bad consequences. Now, though we do not affirm that all the evils attributed to sheet glass arise from its bad quality, yet we believe it often does. The wavy, undulating surface it presents, acting as so many lenses, is sure to cause more or less injury to the plants, or parts of plants, on which such focuses play; as it may be fairly inferred, that all convex surfaces on the glass exposed to the sun's rays, are just so many lenses, not, perhaps, true in their action, yet sufficiently so to be hurtful to a great extent, while the concave, or depressed portions, are scarcely less so, diverting as they do the parallel rays of the sun into a fan-shaped direction, they are sure to come in contact with those of others, and the result is, their united action is too much for the tender foliage of such a climate to endure with impunity, and blotched or scorched leaves are the consequence. This is more especially the case if the means of ventilation be not sufficiently ample or properly attended to, as a neglect of a very few minutes makes a great change in the atmosphere of a pit containing, perhaps, only a very few cubical feet of air, and a tolerable large area of glass surface, unbroken by overlaps or other means, whereby air so often found its way into the structure of former days. Now, we all know the extreme hurt which pits and frames are subject to, whose cubical contents are only meagre; and we believe it is this sudden change of temperature which, when very careful attention is not bestowed on them, is the cause of the most of the misfortunes that befall the inmates of such a place. We, therefore, urge on the correspondent (whose case we now try to throw some light upon) to be sure and give air with great caution, and never to allow his melon pit to get overheated, as the tender foliage of that plant cannot brook such treatment as to live unscathed in an atmosphere not much below a cooking heat. The high state of excitement then suffered is sure to be hurtful, if not fatal, to the object undergoing it. This, of course, relates to the purer kind of sheet glass, glazed in long squares, and as air-tight as can be made; this is apart entirely from burning, which is caused, as we have said, as much by bad glass as any kind of indifferent treatment; but the results of both are loss of health on the part of the plants so placed, only the one is the action of an unduly heated atmosphere, the other the collection of rays to one or more points of action; but we find our space is occupied, and must leave the remainder of this subject until another week. J. Robson.

A MOTHER'S LESSON.

By the Editor of "The Cottage Lamp."

The same person who gave us the valuable anecdote of the "Fool's pence," mentioned another circumstance, which may interest and benefit some of my readers, as proving how surely punishment follows guilt; and how often, too, the punishment is so exactly like the guilt in kind, that we cannot help seeing and feeling that the one springs from, and belongs to the other; so that one cannot say, "Oh, this misfortune has nothing to do with my conduct, it is quite another thing, and springs from another cause." It is a great blessing when the lesson is so plain that "he may run that readeth;" and if we looked closer than we do at what passes around us, we should see many things that are very plain indeed, if our eyes and hearts were not shut against them.

The mother of the excellent man who told us the anecdote was a wise and good parent; and if we may judge by the large family who have all done well and prosperously, her lessons were listened to and blessed. It was her custom to address her family, particularly, upon every subject and event that taught a useful and edifying lesson, and the time she chose for this interesting duty was when they were all

seated at their meals. Then she sat with her children round her, and called upon them to hear her words; and her son, now a man in the decline of life, spoke with deep feeling of the impression they all received at those times of special instruction applied so affectingly to their hearts.

The family had some distant connections, who lived not very far from their home, but whose ways and habits were not like those of the mother's household. They were people of substance and respectability; but they did not consider from whence "all blessings flow," because they did not use them in the manner the Giver of them all has taught us. There is a scriptural rule by which we may and must be guided in everything; and if we neglect it, sorrow will overtake us one day soon.

The mother had often noticed the waste and extravagance going on in her connections' house; and it had shocked and grieved her. She had seen bread thrown into the hog-tub, which was good and fit for food, and might have nourished many a poor person, and broken meat of various kinds flung away and sinfully wasted too. She had drawn her children's attention to this unlawful practice, and pointed out the wickedness of so abusing the gifts of God; for destroying or wasting anything that is good for food is a sin, and we have a strong and striking example of the way in which we should take care of every bit that is broken, or left at our meals, when our Heavenly Pattern said, "gather up the fragments that remain, that nothing be lost."

In the course of time the wasteful family removed to another neighbourhood, and little was heard of them for some few years; but one day, the wise and fond mother, on taking her place among her children at meal time, addressed them in a very solemn way. She reminded them of their friends who had been so long absent; she spoke of their former habits of careless waste, and of the fears she herself had always felt and expressed for the consequences of such sinfulness; and then she told them that she had just heard this very family were now reduced to such deep poverty, that they actually had not bread of their own to eat. All their riches had fled away, in what manner I do not know, but they were gone; and the very portions of loaves, and pieces of meat that had been thrown on the dunghill, or to the pigs, would now be received by these very persons with joy and thankfulness. This was a fruitful subject for an anxious mother to enlarge upon, with a large family of boys and girls before her, who were to be parents, men of business, householders, managers of families, in days to come, and who felt that upon her teaching, by God's help and blessing, the welfare of generations yet unborn might hang.

This circumstance made a strong and deep impression upon the children. It was a consequence and a judgment, taking place so evidently before their eyes, that it caught and fixed their attention; and by the way in which the account was given to us, it would appear that it remained almost as fresh now as when it first took place.

The minds of children are very open to impressions; and more good might be done by improving to them such events as happen around them than by almost any other means; because a young mind is always caught by a story, and a picture, and a story of real life may, therefore, convey a clearer and more profitable lesson than a long, uninteresting exhortation, which too often passes away and is remembered no more. "Precept upon precept, line upon line" is needed, both for old and young; but a fact, and an anecdote fasten upon us, and very often strike home to the heart.

To be wasteful is not liberality, nor is it mean to be careful of that which we possess. Our blessed Saviour's precept and example sets forth the golden mean. He dealt with an unsparing hand bread to the hungry multitude, "as much as they would." *Then*, "when they were filled," but not until then, "He said unto His disciples, gather up the fragments that remain, that nothing be lost."

When we throw away, or suffer to be improperly or needlessly consumed, fragments of food that might do good even to one little hungry child, let us remember how we have been enjoined to take care that *nothing be lost.* And let us also follow the same perfect Pattern, in *hoarding up nothing*, but what we have freely received, as freely give. Let us break our bread, and distribute according to that we have to those that lack, as well as take heed that nothing be lost; for Jesus Christ did both. And we who are poor, frail creatures, must take care not to run into one extreme to avoid the other; but remember that "There is that scattereth yet increaseth; and there is that withholdeth more than is meet, but it tendeth to poverty."

Many simple, scriptural lessons might the humblest mother teach, if her heart was set to obey the commandments of God, and if her children's souls were of as much value to her as their hungry bodies. It needs not to be a "scholar" to point out the way that leadeth unto eternal life, and the path of God's commandments. We can hear, if we cannot read, and the *will* will find out a way to acquaint ourselves and others with the revealed Will of God.

Let Christian mothers take courage, and not faint at the difficult duties they have to do; and let worldly mothers take notice of the wise and blessed means *this* mother used to strike the minds of her little ones. Let us all remember that the "meat which perisheth," needful as it is for the body, and bound as we are to use it to the glory of God, and the good of men, is as nothing compared to that "which endureth unto eternal life;" and that as our blessed Saviour first taught, and then fed the people, so must we do by the souls committed to our charge.

GAME, AND POLAND FOWLS.

In following the order observed by the compilers of the prize list for the Birmingham Poultry Exhibition, passing over the Malay, which has already been noticed in the pages of The Cottage Gardener, we place the *Game fowl* next upon the list. This might, perhaps, be more readily described by disposition than by appearance, for the well-known fighting propensities of this race are so powerful, that even among the young chickens their eyes and lives are endangered by it at an incredibly early age. This exceedingly troublesome quality occasions their exclusion from most poultry yards, although they are frequently good layers, and their somewhat small, but prettily tinted, eggs, are rich in flavour: the hens are celebrated as good sitters and spirited, careful mothers.

Now that this pugnacious disposition is, to the honour of civilisation, no longer cherished for sport, their spirit is a characteristic which has no advantage, but is, on the contrary, a great nuisance and inconvenience appertaining to this pretty kind of fowl. In size they are rather small, weighing from four pounds to five-and-a-half. Their colours are as various as they well can be; not to enter into all the technicalities of piles, pole-cats, cuckoos, &c. &c., they are buff, yellow, red, brown, grey, and, I believe, sometimes black. The form of the cock is peculiarly slender and upright, with a fine flowing tail, bold bearing, small head, single comb, bright fiery eye, and white or yellow beak. The plumage should be long, glossy, crisp to the touch, and sitting close to the fowl. The fowls should have a ruddy appearance about the head, with the legs white, or inclining to yellow; beak and legs should agree in colour.

On account of the celebrity of this kind of fowl, many rules respecting the breeding of them have been laid down; such as to mate an old cock with pullets, or mature hens with a young cock; to give the gentleman only a small number of companions; to let there be no relationship between the cock and the hens; to divide into groups which are well matched in plumage, and to let the advantage of size be on the part of the hens. If this kind of attention were bestowed on stock fowls in general, I believe we should meet with fewer degenerate specimens of choice sorts than we do by a great number. A game cock is sometimes disposed to take a dislike to some one of his hens in particular. I once knew a pretty hen whose life fell a sacrifice to some such unaccountable fit of aversion on the part of the cock. The game fowl is said to be more subject to roup than other kinds of poultry.

It is omitted to mention, at any rate for the present, the golden and silver spangled and pencilled Hamburgh fowls, in hopes that the appeal in The Cottage Gardener, May 27th, may be responded to, and that some amateur of these kinds will favour its readers with a description of them.

The different varieties of the *Poland fowls*, black, silver spangled and golden spangled, are both beautiful and rare; it is very difficult to obtain them pure bred and handsome.

They are round, compactly built, medium sized birds; they are good for the table, and are said to be good layers. The eggs have white shells, are of good size and flavour, and are rather thick in shape. The distinguishing mark of the Poland breed is a large, round, compact tuft on the head, designated in the newly-hatched chickens by a round lump on the little pole, perceptible from the very first. This tuft, or top-knot, is much less compact and handsome in the cocks than in the hens. In fine weather it gives a very pretty appearance to them, but looks miserable enough when the weather is wet. The black Poland fowls have the plumage of a deep, velvety black, and very soft to the touch. Tuft, pure white; legs and beak, dark grey. The spangled varieties are the golden, yellow spangled with black; and the silver, white spangled with black. The spangling should be equal, the tuft on the head being also spangled.

For perfection of beauty, the golden spangled Hamburgh fowls should have yellow beak and legs, and with the silver spangled the legs and beak should be white, or very pale grey. Perhaps those who are in the habit of rearing these fowls, and have had more experience with them, will say it is as difficult to get together a number so perfect, as the amateurs of the Cochin-China fowls find it to raise a great many of a delicate, pale buff, without speck, or spangle, or pencilling of any other or darker colour.

Another kind of Poland, the white with a black tuft has often been mentioned, but it is, I believe, seldom seen; I have never met with it. Supposing the tuft to be quite black, and the white to be pure, it must be singular in appearance and very beautiful.

It is hoped that those persons who are well acquainted with the game and Poland fowls, will kindly remember that discussion is desired, and that they will favour us with such corrections or additions to these descriptions, as may appear to them necessary. Anster Bonn.

FLORISTS' FLOWERS.

Pansey (*R. R. C——, Stamford. No.* 3).—A rich purple self; eye yellow and small; form very good; medium size. Not differing from many others, but quite their equal.

Gladiolus (*W. H. T.*).—The potato in which it had been stuck had broken loose and beaten it to pieces.

Fuchsia (*J. Willison*).—Sepals brilliant dark crimson, shining and stouter than any variety we remember; corolla purple, softening to pink near the bottom; size large. If the sepals reflex well, and the habit of the plant is good, it is an acquisition.

TO CORRESPONDENTS.

Forcing Strawberries (*Countryman*).—The most successful of our strawberry forcers endeavour to obtain their runners as early as possible; for that purpose a few plants are planted out, very wide, on some suitable place. The flowers all picked off as they show themselves, and the pots, filled with good soil, placed to receive the runners as soon as they appear, which of course is much sooner when there is no crop, than when there is one. The runners from plants forced the same season are generally deficient in vigour, and seldom succeed well; one of the principal points to be attained, is to get the plant well established in the pot, and to form a bold prominent crown; large pots are less likely to accomplish this than smaller ones; 48s, or it may be, 32s, are quite large enough. A description of a pit suitable for forcing strawberries was given by Mr. Errington some time ago; but if you have not the number by you, we may say that bottom-heat and plenty of top air are the principal agents at work. A pit for strawberries ought to produce melons afterwards.

Melons Cankering (*Ibid*).—You will see an article by one of our departmental writers, on "Glass," which will partly explain the most probable cause of your melons becoming brown; but cankering at the stem is another affair, and we fear you over-watered them during the dull seasons. We have some time in June encountered canker early in the season, to counteract which we applied quick-lime to the part, which, acting as a caustic, often cured the evil.

Pines Blotching (*Ibid*).—There must be something radically wrong in your pine-pit, otherwise the leaves ought never to have been blotched with the little sun we have had prior to receiving your letter. Examine your glass, and see if you cannot discover some defects in it.

Bottled Apricots and Peaches (*E. L.*).—The fruit must not be quite ripe; cut with a penknife, near the stalk, a small hole, and take out the stone; dip them into boiling water, taking care that they do not break, take them out as they rise in the water, and put them immediately into cold water; when cold, drain them on a sieve. Boil some syrup, skim it, and put it gently over the fruit, leaving them room to float, boil them three or four times very gently, and put them carefully with the syrup in a pan. Next day drain them from the syrup, which is then to be boiled, and thus made thicker; put the fruit back into it, boil them gently twice, skimming well. Repeat this for three days, and the last time boil the syrup until it is a little thicker, but not too much so. Boil the fruit in it again gently; put the fruit into the bottles or jars, and cover it with syrup.

Cochin China Eggs.—Will *A Subscriber*, who at page 173 complains of the dearness of these eggs, send us again his address, which has been mislaid. We have a letter for him.

Bees (*T. Farquhar*).—Ants may be prevented creeping to the hives by having a ring of coal tar painted round the pedestal of the stand, and renewing it as often as it becomes dry. You cannot keep out *earwigs*, for they can fly.

Golden-pencilled Hamburghs.—*J. F.* wishes to know where he can obtain some chickens of the genuine breed.

Orchard-house (*Tyro*).—In our No. 120, you will find full directions for erecting one. If eight feet high behind, it should be thirteen feet wide, and three feet high in front. You must refer to advertisements in our back numbers as to dealers in glass. You may grow fruit trees all round them, and all over the floor, if in pots, according to Mr. Rivers's plan.

Liquid Manure (*A Subscriber*).—The undiluted drainings of a stable, consisting chiefly of horse urine, will be quite strong enough for liquid manure if mixed with four times its measure of water. You may use it quite fresh poured in a trench about the roots of your roses, flowering geraniums, and kidney beans.

Insects (*J. F. B.*).—The insects you enclosed are a species of Snake Milipede (*Julus pulchellus*), of which you will find a drawing and description in Number 38 (vol. ii., page 139). We do not think they injure the roots of peas, nor any other living vegetable, but that they come to eat decayed or injured parts, just as you find them in the holes formed by slugs, &c., in ripe strawberries. This is our opinion, against or in favour of which we shall be glad to receive any statement of facts.

Rabbits (*W. B.*).—It is very uncertain work destroying rabbits to save your crops, which they invade. You had better run a galvanized-iron net, if practicable, round the boundary.

Tenant Removing Trees.—*A Worcestershire Man* says, "I am glad you have set at rest this *deteriorating* question. I remember a case tried at Warwick assizes, some years ago, for removing shrubs, trees, and box-edging, from a garden at Leamington, planted by the tenant; verdict for the landlord, the plaintiff. Chief Justice Best told the jury 'that, *prima facie*, the premises were let to be improved, and not after years occupation to be denuded of ornaments and comforts, and so reduced to the state of newly-made premises, and even worse. If landlords *agree* that a tenant may do such things, common law becomes inoperative, and the special agreement will, of course, prevail; but it is the policy of the law to improve, not to allow the retrogression and deterioration of property.' When a nurseryman steps into the shoes of an ordinary tenant, he will fall within the same rule of law, therefore, it is incumbent upon him to have a clear understanding with the ground landlord as to his right to remove, for, otherwise, coming in under non-exemption, he could not plead the exemption in favour of trade."

Cochin-China Chickens for Exhibition (*An Intending Exhibitor*).—Give them all the food and exercise they will take, varying the former as much as possible. Crushed corn, barley-meal, boiled rice, &c., and a little cooked meat daily, chopped very fine. Keep the cockerels apart from the pullets. The young cockerel's voice will be quite right shortly.

Bees (*Ibid*).—Let the super-box be placed upon Taylor's hive three weeks after the swarm was hived.

Bees (*C. S.*).—It is not simply placing a glass upon a hive that will prevent swarming. The bees must be induced, by guide-combs being fixed, to commence working at the *top* of the glass, and, when well established in it, ventilation in some way must be afforded. Perhaps the most simple manner will be to raise the glass from the hive about an eighth-of-an-inch all round, and the hive the same from the floor-board. J. P.

Bees (*A Country Curate*).—There has been an unusual disposition amongst the bees to swarm this year, which is always the case in a rainy time; but this season much greater attention than common has been necessary to prevent it, and, indeed, in some cases it has been impossible. In your case all appears to have been done that in an ordinary season would have prevented swarming. It would be well to transfer the supers, of whatever kind, from the stocks to the swarms, where they will be filled if favourable weather sets in. A much better price may be obtained for really fine honey in glasses, in the months of June and July, than 1s. per pound, even of honey-dealers in London.—J. P.

Queen Bee's Piping.—"A Country Curate," in reply to *C. R. R.*, says—"I have *not* yet heard the *piping* of young queens in the interval between the compulsory return of a first natural swarm—the old queen having been destroyed—and its reissue. But I know no reason why piping should not occur, as is usual before the issue of a cast; indeed, we might *a fortiori* expect it, as it is only when there is a considerable population in the hive that piping is heard; for then, if ever, the bees can afford to place a strong guard over the cells of the often full-grown but imprisoned princesses, who are impatient of confinement."

Exchange of Rose-buds.—*Mr. James Riley, jun.*, of Chicheley, near Newport Pagnel, having a moderate collection of roses, is willing to exchange buds of them for buds of varieties he does not possess.

Kidney Beans (*A Constant Subscriber*). — The two seeds you enclosed are those, we think, of the *Prague* variety. They are sold by most largely dealing seedsmen in London and Edinburgh.

Rumpless Fowls.—This variety may be obtained by applying to Mr. Samuel Hill, Victoria Boiler Works, Heywood, near Manchester.

Strawberry Runners (*J. C.*).—We never employ the runners from barren plants; if we require runners very early and strong, we pick the blossoms off from the requisite number of fertile plants. These then produce runners as strong and as early as the barren plants, and for the same reason—whenever you remove one mode of a plants propagating itself, you increase its energy in any other mode it may possess.

Names of Plants (*H. B.*).—No. 1. *Gaultheria procumbens.* 3. *Menziesia polifolia.* Of 2 and 4, send us better specimens when in flower.

London: Printed by Harry Wooldridge, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published by William Somerville Orr, at the Office, No. 2, Amen Corner, in the Parish of Christ Church, City of London.—July 1st, 1852.

WEEKLY CALENDAR.

M D	W D	JULY 8—14, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
8	TH	Round-leaved Campanula flowers.	29.798 — 29.714	71—50	N.W.	08	55 a. 3	15 a. 8	11 49	21	4 44	190
9	F	Cambridge Term ends.	29.811 — 29.696	67—43	S.W.	16	56	14	morn.	☾	5 53	191
10	S	Oxford Term ends.	29.864 — 29.677	69—38	N.W.	24	57	13	0 6	23	5 1	192
11	SUN	5 SUNDAY AFTER TRINITY.	30.140 — 30.089	70—56	W.	—	58	12	0 23	24	5 9	193
12	M	Wood Parsnip flowers.	30.036 — 29.919	75—48	W.	—	59	12	0 44	25	5 17	194
13	TU	Hemlock flowers.	29.866 — 29.571	73—51	S.W.	20	IV	11	1 7	26	5 24	195
14	W	Scarlet Martagon flowers.	29.577 — 29.462	71—50	W.	—	1	10	1 37	27	5 31	196

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 74.8° and 51.5° respectively. The greatest heat, 90°, occurred on the 12th in 1847; and the lowest cold, 39°, on the 8th in 1850. During the period 114 days were fine, and on 61 rain fell.

Two score of years ago, if any one had told us we should ever have anything pleasant to write about the man who devised "Mavor's Spelling Book," we should have replied, in boyish phrase, that "that would be to-morrow-come-never," for we abhorred those columns of words of five syllables far too deeply ever to conceive that we should even respect the fellow who got "such a heap of hard words together." Time, however,—"what will not time subdue!"—has softened the remembrance of the horrors of "spelling mornings," and we can even say, "Peace to his ashes"

> "Who, brandishing the rod, did oft begin
> To loose the brogues."

We do not wonder, therefore, that we can write calmly, and even approvingly of the author of that spelling book, DR. WILLIAM MAVOR, and are not surprised to find, that, instead of being fond of puzzling little boys, and of having them flayed alive like an ogre, he had a heart of more than usual kindness, and loved to promote the improvement of the soil quite as much as the improvement of bad spellers.

This industrious author, and truly amiable man, says his biographer, was born on the 1st of August, 1758, in the parish of New Deer, Aberdeenshire. He left his native country at an early age, and when no more than seventeen, officiated as an assistant in an academy at Burford, in Oxfordshire. He subsequently established himself in a school at Woodstock, and having been employed to instruct in writing the junior branches of the Marlborough family, at Blenheim, he obtained so much favour as to procure a title for holy orders in 1781.

In 1789, the Duke of Marlborough gave him the vicarage of Hurley, in Berkshire, which he retained until his death; and in the same year the degree of Doctor of Laws was conferred upon him by the University of Aberdeen. Subsequently he was presented, by the same patron, to the rectory of Stonesfield, in Oxfordshire, which he resigned in 1810, and in exchange obtained the rectory of Bladon-with-Woodstock.

As a magistrate, his conduct was most exemplary, and most useful; and his brother townsmen evinced their good-will and confidence by ten times electing him to the office of Mayor. By his many useful publications, written during a literary life of fifty-six years, Dr. Mavor evinced his deep regard for the promotion of useful knowledge, and the temporal and eternal welfare of his fellow-creatures. But we must not find space for even the titles of more than of those which gave him a claim to a notice in these pages. These were—*A Dictionary of Natural History*, under the name of Martyn, 1784, 2 vols., folio. *Elements of Natural History*, for the use of schools, 1799. *The Lady and Gentleman's Botanical Pocket-book*, 1800. *A General View of the Agriculture of Berkshire*, 1809; and a new edition of *Tusser's Five Hundred Points of Good Husbandry*, 1812.

Many of his works, particularly his *Spelling-book*, and others formed for the purpose of education, have, from time to time of their publication, been exceedingly popular and successful. But one of the most feeling of his publications was a selection from his former writings, with general moral reflections, derived from his long experience of the human character, which appeared in 1829, under the title of *Miscellanies in Prose and Verse*, &c.

On taking this review of his literary labours, he remarked, that "he looked to the tenor and the tendency of his numerous publications, both with and without a name; and, as far as principle and intentions are concerned, he contemplated what he had done without a fear, and without a blush," adding that he was sustained by reflecting, that "the consciousness of meaning well, however imperfect his performances, and that he had never, by a single sentiment, pandered to vice, or injured the cause of virtue, shed a gleam of sunshine on the closing scenes of life."

With regard to his domestic relations we find these reflections:—"Domestic society is the prime charm of life. If our friends be comfortable, we may despise the malevolence or the ingratitude of the world, and bear with fortitude the injuries of fortune. I have known, though late, what it is to be happy at home, and 'till then I never knew bliss but by name!"

The tablet to Dr. Mavor's memory is fixed outside the wall, at the west end of the church; the inscription is as follows:—

> Sacred to the memory of
> the *Revd. William Mavor*, L.L.D.,
> the first great promoter
> of the catechetical method of instruction
> in all its branches
> of human as well as divine knowledge,
> who, though dead, yet speaketh
> for the improvement of youth and infancy,
> in the volumes
> which he benevolently and judiciously adapted
> to the growing powers of the mind.
> He was rector of Bladon with Woodstock,
> and vicar of Hurley, Berks,
> a magistrate for the county of Oxford,
> and ten times Mayor of this Borough.
>
> Beloved and esteemed by relatives and friends,
> and respected by those
> whom as a minister and a magistrate
> he had so long and faithfully served.
> He departed this life
> Dec. 29, 1837, in the 80th year of his age.
>
> The feeling soul may linger here,
> Soft pity's bosom heave a sigh;
> But spare my dust, and come not near
> Cold apathy! with tearless eye. W. M.

The Doctor was a triton amongst the minnows, and exceeded the little corporators of Woodstock as much in mind as he did in stature. They could never subdue him.

The rectory-house there comes as a gift from a late Bishop of Oxford (Bishop Fell), and is left in trust with the corporation of Woodstock, for the rector of Bladon, and when it is the pleasure of the latter not to reside in it, the corporation have the power to let it, and distribute the proceeds amongst the poor. Ununited with the mother church of Bladon, and unendowed, is the *chapel* (mis-named church) of Woodstock, which, with the Grammar School attached, belongs to the corporation, and wherein, in reality, the rector of Bladon is not compelled to do any duty whatever; he does so from custom, arising from the circumstance of his living in this house, which is situated in the most populous part of his parish; a modicum of the duty, also, at the mother church, on consideration of his officiating in the chapel being dispensed with (at least this was the case previous to the present rector's time). The corporation, however, as a matter of wise policy, buoy themselves up with the threat, that the rector of Bladon is bound to perform service in their chapel; and thus an occasional "palaver," as the Indians term it, sounds about the ears of the incumbent, and as often results in no more than a little sparring. Church-rates always afford a contentional bone. The residence is the rectory-house, to all intents and

purposes; and the rector considers, according to recognised custom, that he is not liable to church-rates, and always pays them under protest.

Not so, Dr. Mavor. Once upon a time these rates being obstinately demanded, or something equal in money value insisted on, the Doctor said, "seize the *gun*," and the gun was seized accordingly. As a lawyer, he then set himself to work, and immediately the gun found itself again in its place, in the entrance-hall, which large old-fashioned apartment the Doctor would complacently pace, soliloquising aloud, "Ah! gun—gun! so you are come back again. Ah! gun—gun! so I see you're come back again." "He'd a mighty knack of talking aloud to himself; and a wonderful man he was for studying, and was most always a writing," said our informant, who lived with the Doctor many years.

So great is the interest now prevalent in all that relates to our Domestic Fowls, and that interest is so likely to be productive of national benefit, that we shall devote the present and some future leading pages to a consideration of their history. We shall do this the more readily, because it will enable us to bring in succession before our readers the works of the chief writers upon the subject.

It must have struck every one conversant with the Bible, that abounding as does the Old Testament with beautiful similes, yet not one is derived from the habits of the domestic fowl. This may have arisen, as is suggested in one of the best books we have upon poultry, "because tending them would be the occupation of women, whose domestic employments are less prominently brought forward by oriental writers than the active enterprizes of men;"* and this opinion is sustained by our knowledge, that the milder spirit commended and illustrated by our Saviour, made him select the brooding hen as the comparison to make his hearers feel most forcibly his anxiety to gather together and to cherish the Jewish people. In one of the apocryphal books (2 *Esdras*, i. 30), there is the same simile, but there is great reason to believe that this book was written in the first century after the crucifixion. Not only is there an absence in the Old Testament of all similes derived from the domestic fowl, but even any mention of it is obscure. The only passage in which we think it is clearly referred to is in the 4th verse of the 12th chapter of *Ecclesiastes*. It is there said that one of the habits of the aged, is that "he shall rise up at the voice of the bird." "This," says Dr. Parkhurst, "appears to be the house-cock, at whose first crowing the restless old man is ready to quit his uneasy bed." The same good Hebrew scholar considers also that when Nehemiah states "fowls were prepared" as part of his daily provision, during the Jewish captivity in Persia (*Nehemiah* v. 18), that domestic fowls were intended, observing that these are still sold in the Aleppo markets.

That the domestic fowl was well-known and fostered by the earliest nations of which we have record is certain, and we know not how it can be disputed that they existed before the Noahchide Flood, for if they did not, it would be difficult to explain how they reached the Islands in the Pacific, where they were found to be abundant, when those Islands were first discovered by Captain Cook. Be this as it may, it is quite evident that they were in such great request in Egypt at the earliest time of which a faithful history is preserved, that their eggs were hatched artificially. We know this on the authority of Diodorus Siculus, an historian who lived about half a century before the birth of Christ; that is about 1900 years ago.

We have notices of the regard paid by the Grecians to domestic fowls at a period of more than four centuries earlier than that, and by them they were considered as particularly under the guardianship of Mars, their God of War. They were offered to him in sacrifice, and are so mentioned by Aristophanes, who flourished 430 B.C. The crowing of cocks was considered an auspicious omen, for it was heard just previously to the victory of Themistocles over the Persians, 480 B.C., and he instituted an annual feast in consequence, and distinguished it as the *Alectryonon agon*, which may be Englished—The Cock Festival. The reason of the cock's crowing being interpreted an omen of success was because he sits silent and moody when overcome, but struts and crows when he triumphs in his contests.

The same superstitions influenced the Romans, a people of whose practice in husbandry, poultry-keeping inclusive, we possess fuller information than of any of the other of the ancient nations. Cato, the most ancient of their writers on such subjects, has a chapter on the fattening of fowls and geese, but passing on to another author, Columella, who lived a century later, namely, about the year 50 of the Christian era, we find in his pages very full particulars concerning the Roman fowls and their management. These we shall extract with such comments and illustrations as they seem to require.

"The keeping of fowls is a usual occupation of the farmer. The kinds are either the poultry-yard, or the country, or the African. The poultry-yard fowl is a bird commonly observed at nearly every country residence; the wild fowl (*rustica*) is not unlike it, and is caught by the fowler; there are many of these in an island situated in the Ligurian Sea (on the coast of Italy), which the mariners, lengthening the name of the fowl, call Gallinaria."* Of the African or Numidian fowl we shall take no further notice at present, as Columella evidently intended by it that which we now know as the Guinea Fowl, Pintado, and Gallina. The females of the poultry-yard fowls are properly called hens (*gallinæ*), the males cocks (*galli*), and the half-males capons (*capi*). The profit arising from these fowls is not despicable, if skill be employed in bringing them up. For this skill many of the Greeks, and especially of the

* *Ornamental and Domestic Poultry, their History and Management.* By the Rev. E. S. Dixon. Second Edition. 1850.

* From this passage we gather that there were then in Europe a wild species of the domestic fowl. Varro mentions the same island, but observes that the poultry upon it were, probably, the result of the common poultry-yard fowls, put upon the island by seamen during their visits. It deserves remark, that Juvenal mentions a wood near Cumæ, in Italy, called "The Poultry Wood (*Gallinaria sylva*)."

Delians, were celebrated. They, however, preferring large-bodied fowls, and fowls courageous and obstinate in fighting, selected chiefly the *Tanagrian* and *Rhodian* kinds. They scarcely less preferred the *Chalcidian* and *Median*, which the ignorant vulgar, by changing a letter, call the *Melian*. For our own part, we chiefly prefer our own Italian breed, for we have no taste for that pursuit of the Greeks, who prepared the fiercest to fight for their amusement. We prefer to show our opinion how an industrious housekeeper may provide a yearly income, rather than to instruct a master of cocks, or a keeper of quarrelsome fowls, whose whole patrimony often is hazarded and carried off by the victor in this poultry pugilism."

Varro tells us that the *Median* variety was brought from Media on account of its large size, and their offspring continuing to resemble them the name was retained. Media, it is worthy of remark, was a country of Asia, that quarter of the globe still celebrated for the size of its fowls. The *Tanagrian* breed came from Tanagra, a Grecian town greatly celebrated for cock-fighting; and the *Chalcidian* variety from Chalcis, a town in one of the Greek Islands.

We shall next detail the points which the Romans considered characteristic of excellence in fowls.

FORSYTH MSS.

At page 79 of our 5th vol. we gave a memoir of Dr. John Coakley Lettsom, and we must refer our new subscribers thither for particulars relative to that amiable man. We have nothing to add to that memoir, but the following letter is so characteristic of him, that we publish it as an illustration of his biography. It is dated February 20th, 1804.

DR. LETTSOM TO MR. FORSYTH.

Dear Mr. Forsyth,—I hardly could have expected that in the multitude of your engagements you would have remembered an absent friend, I am, therefore, the more obliged to you for your kindness in sending me the vines, whose roots will, I hope, afford good shoots this year. My trees are undergoing the medical and surgical operations recommended in your invaluable work; even the gooseberries have each got on a new spencer. Some I have cut down low, to gain new shoots; and I hope you will take an opportunity this spring to visit your patients at Grovehill.

By the change my only daughter is soon likely to undergo, I shall claim Colonel Elliot, of Pimlico, my son, whom I desired to visit you, and I am sure you will take a pleasure in showing him your hospital of invalids. I am as well persuaded that he will be happy to see you at Pimlico, where he possesses a magic habitation, with twenty acres of useful and ornamented land. Although in the city of Westminster, he is about erecting hot and greenhouses, which will altogether render his residence a paradise, and I know you like to see a terrestrial one, which, indeed, is an excellent preparative for enjoying a celestial one; but although you have a fair title to the latter, I hope you will be long kept out of possession, and that you may long long continue to enjoy the former, is the wish of your friend,

J. C. Lettsom.

GOSSIP.

One of the judges of the *Liverpool Horticultural Show* has obliged us with the following notes of that meeting.

The second floral and horticultural exhibition of this influential and growing society, took place in the Botanic Gardens, at Edge Hill, on Thursday, the 24th of June, and a more auspicious day could scarcely have been selected. A spacious tent was specially erected, and so arranged as to offer several very broad promenades to such a stream of ladies and gentlemen as such towns as Liverpool alone can pour forth. A select band, stationed on an elevated orchestra at the entrance of the delightful tents, discoursed most excellent music; and, indeed, the whole arrangement of the tents, and the carrying out the objects, reflected the utmost credit on the officers concerned. Having for many years acted as a judge at these interesting gatherings, which was the case also on this occasion, I may be considered capable of estimating the position of this society and its rate of progress. On the whole, then, this is highly satisfactory, and quite in proportion to the general advance of horticulture; indeed, this season, as far as culture is concerned, it may be said to have made a bound; for in some classes the advance was beyond my expectations, which were not of a very moderate character.

First, I may particularise the *Pelargoniums*. These, especially the fancies, were a glorious group, and little behind our great metropolitan shows. *Orchids*, too, which some three or four years since were scarcely represented, were very respectable, although not of great rarity, and contained some fine specimens of Oncids, Cattleyas, &c. Amongst *stove and greenhouse plants* I would point to good specimens of Allamanda, Clerodendron, Aphelexis, Ixora, Kalosanthes, Chironia, Stephanotis, Schubertia, Nerium, Erythrina, &c., and such new or singular things as *Hoya bella*, *Mitraria coccinea*, *Mussænda*, *Cyrtocera*, *Curcuma Roscoeana*, *Pleroma elegans*, &c. The *Heaths* were not by any means remarkable, and the *Roses* far beneath my expectations. The *Gloxinia* section was very rich—one of the most interesting features—and a nice group of *Exotic Ferns* graced the extreme end; amongst them some choice species. Some rare *Conifers*, from Skirvings, formed an interesting group, and some beautiful wax flowers, by ladies, formed a feature of much interest. Those by Miss Newton, one of the "Mintern" school, a young lady from Newcastle-on-Tyne, were much admired, and carried off the prize. The *Bouquets* were rough. John Bull is still much behind his Gallic neighbour in these things.

With that liberality which distinguishes such opulent towns as Liverpool, a cold collation was placed on a table appropriated to the purpose, in a shed at the back of the house, where the officers, judges, and exhibitors, many of whom came from a long distance, might recruit their strength. I am not aware of the number of visitors, but should imagine they might range from three to four thousand. I may add, everything passed off delightfully. The judges were Messrs. Dwerrihouse, Ellison, and Errington for the fruits, plants, &c.; and Messrs. Slater, of the "Northern Florist," and Chadwick, for the florists' flowers.

We have been favoured with the following report of *a sale by auction of choice poultry*, which took place on the 29th of June, at Mr. Stevens's Rooms, in King-street, Covent Garden, and was the first of the sort which he has conducted.

"There were between thirty and forty lots. A middling good Cochin-China cock sold for four guineas; an *exceedingly* good Cochin-China hen (but not grand in either size or colour), the same; a nice coloured Cochin-China cock, but small, £3 5s. There was one very nice pair of Cochin-China chickens sold for £3 12s. 6d. The rest of the chickens went, what I consider cheap, as any which are not first-rate generally do; the prices varying from 10s. to 24s. the pair. One good pullet sold for 28s. Of course I cannot tell whether all the sales were real.

It was a great illustration of the tameness of these pretty creatures, that all the Cochin-China full-grown fowls were taken out of their baskets, and placed on the table amidst a number of persons. They only looked a little surprised, quite self-possessed, and *very much* as if they would have been grateful to have had a handful of corn spread on the table. A Spanish fowl got out by accident, and behaved in a very different manner. A pair of silver Hamburghs were not good, and badly matched.

I am afraid you rather misled folks, in saying that "very precocious pullets rarely occur." In raising hens of good weight, it is the greatest difficulty we have to contend against. My best pullet (or rather pullet of best promise); last year began to lay at fourteen weeks old. I let her go in consequence, but I have heard of her since—a bad account with regard to size—she is of course a first-rate layer.

I had almost forgotten to add, that most of the fowls at the sale came out of Norfolk. Some, one hen in particular, I think I have seen in the stock of a fellow-amateur near London.

Mr. Pannell, of Leicester, has written to us as follows:—

"I have delayed writing to you, as I have been waiting to see the results of my *heating apparatus*, where I have fixed it. I can now, with the greatest confidence state, that for the growth of pines, grapes, cucumbers, melons, &c., there is nothing that I have seen will touch it; and I have visited most of the first houses in the country, as you are aware. I fixed one for James Yates, Esq., of Rotherham, Yorkshire, which gives bottom-heat to a pine-bed 30 feet long, and 10 feet wide, with 20 inches of mould, and the heat they can constantly maintain is from 95° to 110°, and higher if required. It gives top-heat to the house, which is 36 feet long, and 15 feet wide; it also heats another grapery 30 feet long, and 15 wide, divided in the middle by a glass partition. One end is heated as an early grapery, the other a late one, and both have a good crop this year; at the end of this house it heats a cucumber-pit 20 feet long, and 5 feet wide, with top and bottom-heat; and at the end of the pine-house it heats a tank outside, for bottom-heat for the roots of a vine, '*an experiment*,' and it succeeds to admiration. I made the pine-bed, and planted ninety pine plants in the open mould, and they are growing and fruiting well. Heating the vine-border outside the house for *very* early forcing is a desideratum long sought for, as *you* are aware, and I again say, this plan proves most successful. I can heat it when required, and when the vines are at rest shut it off. Mr. Yates's gardener planted some potatoes on the bed, and they also did well; therefore, as you wish to make the Cottage Gardener the medium of communicating useful information to the horticultural public, I am confident you cannot too widely disseminate this, as by it the roots of the vine can be steadily excited at the same time the buds are inside the house, so that it will produce an artificial spring. I have heated a new hothouse for the Rev. B. E. Watkins, of Truton Rectory, near Rotherham, Yorkshire, 74 feet long, and 16 feet wide. I put in 354 feet of four-inch pipe, and it heats it presently, and has given him great satisfaction. I have also heated a new conservatory for Geo. B. Paget, Esq., of Sutton-Bonnington, Notts; his is heated by eight rows of four-inch pipes underneath the floor, which is laid with seven-inch battens, with ¾-inch joists over the pipes; the building is 38 feet long, and 24 feet wide, and it heats it and the end of the drawing-room, which opens into the conservatory by means along the wall, with three ventilators, to let the heat into the room. I have also heated one for pines, vines, and cucumbers, for B. B. Sandbrook, Esq., Market Drayton, Salop; one for J. Price, Esq., Coton Terrace, Shrewsbury, which heats two pits with bottom and top-heat, one three feet above the other; another for the Rev. R. Drake, of Stourmouth Rectory, Wingham, Kent, and all give the greatest satisfaction."

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Allendale, Sept. 11th. (*Secs.*, G. Dickinson and G. J. French.)
Barton-upon-Humber. First show 14th July. (*Sec.* C. Ball.)
Bath, July 29th, Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)
Bridgewater, Sept. 22. (*Secs.*, Mr. J. Leaker and Mr. J. Hayward.)
Brigg, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
Bury St. Edmunds, July 30 (Picotees); Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
Caledonian (Inverleith Row), Edinburgh, Aug. 7, Sept. 2, Dec. 2.
Castle Eden, July 8.
Cheltenham, Aug. 26.
Chiswick, July 10.
Clapham, July 8, Sept. 11.
Colchester and East Essex, Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Derby, Aug. 4.
Durham, Sept. 8.
Forfarshire (Eastern), July 21 (Brechin); Sept. 15 (Arbroath).
Hampshire, Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hexham, Sept. 15, 16.
Hull, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), Sept. 9.
Lewes Grand National, July 14 and 15.
Lincoln, July 27, Sept. 14.
Liverpool, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), July 13†, 27, Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Maidstone. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), July 9, Sept. 10.
Newbury, Sept. 3.
North London, Sept. 14; Nov. 23, Chrysanthemum.
Northampton, July 27, Carnation; Sept. 27, Dahlia.
Oxfordshire (Royal), July 29; Sept. 23. (*Secs.*, C. Tawney and W. Undershell, Esqrs.)
Peebleshire, July 13th, Sept. 14th. (*Sec.*, J. Stirling.)
Ponteland (Newcastle-upon-Tyne), July 14; Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)
Seaham Harbour, July 14.
South Devon Botanical and Horticultural, July 13; Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), July 15†, 21, Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, Aug. 6, Sept. 17.
Whitehaven, July 9, Pinks; Sept. 17, Dahlias.

POULTRY SHOWS.

Agricultural Society (Royal), Lewes, July 12.
Birmingham and Midland Counties, 14th, 15th, 16th, and 17th December.
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).
Cornwall (Penzance), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)

† For seedlings only.

BREAST WOOD.

Most of our readers are aware that trained trees, especially those confined to walls, produce a most inconvenient amount of spray during the growing season, and that much of it proceeds from portions of the trees where it is by no means required. This gardeners term "breast wood," and in some trees, as in the pear, it proceeds almost at right angles from the wall or trellis. It is well for the novice that nature has stamped a peculiar character on this kind of wood, for it cannot readily be confounded with the true or bearing wood. It will, for the most part, be found much longer-jointed, grosser, and, as before observed, producing a more obtuse angle at the point of junction. It is almost

unnecessary to observe, that the production of such gives to the trees a most confused appearance; nor is this the whole of the evil; its immediate tendencies are to rob the fruit of a portion of their nourishment, and to decoy the flow of sap too much from the fruitful wood—indeed, the former is, in the main, a mere consequence of the latter.

Besides all this, it produces a most inconvenient and prejudicial degree of shade, leading to immaturity in the wood and the embryo spurs, and a consequent infertility. Thus, then, stands the case as to its *present* bearing; but this condition is fraught with consequences affecting the tree in future years. An almost invincible coarseness of habit is engendered—a tendency to produce wood rather than fruit, and that too of a succulent or immature character. Hence the necessity for severe root-pruning, or a total removal of the tree; and although root-pruning cannot be estimated too highly as a remedial measure, preventives are by far preferable.

As to such wood being a robber of the fruit, any one may soon be convinced of this by obtaining a peach or pear-tree which has become unequal in condition through mismanagement or neglect in this respect. Such trees may be found in most gardens, the lower portions luxuriating in this breast wood, whilst some of the upper or extreme portions, covered it may be with fruit, have scarcely produced any wood. Here the very portions which most need the assistance of the life-giving fluids are worst supplied, the ascending current being arrested and appropriated by the greedy breast shoots. This state long continued, the extremities wear themselves out by bearing and partial starvation; a drying-up gradually taking place in the sap-vessels, whilst the coarse breast shoots have been in vain attempting to escape the trammels of man—trying to gain their liberty. All this happens in strict accordance with those laws which determine the flow of the sap, and the habit of growth of the tree—a habit which man is compelled to control and regulate in order to render the tree subservient to his purposes. This brings us to the measures necessary to be pursued under such circumstances.

We have, in previous papers, suggested a close attention to the young shoots in May, at what is broadly termed "disbudding" season. Here, to pursue first-rate practice, the preventive measures should commence. Unluckily, however, most people are too busy to be able to carry out the proper course. Very few gardeners in the country are allowed the proper amount of labour through May and June; but if ever it should be our lot to attain to a coronet, or even reach that round of the social ladder on which stands the country squire, we shall make a point of giving our gardener a *carte blanche* in regard of the amount of labour during those two months, however we might arrange during the rest of the year. No man knows the consequence of a scant of labour in spring but the gardener; and we can only repeat that it is anything but a gain to those who have to pay the piper. But to our track. The preventive measures in May consist in first totally disbudding all gross shoots assuming the character of superfluous breast wood. Next in order, and following on the heels of that operation, should commence the pinching process; and, in order that our readers may have the *rationale* of every proceeding, it may be observed that two reasons exist for this operation; the one a matter of expediency, the other based on a principle. It may here be noticed, that *early* pinching or stopping is not resorted to simply to admit light, although it must be confessed this is one of the reasons; it is resorted to, also, in order to control the over vigorous root action, a power which at this early period it exercises with much influence. Trees cannot long continue exuberant without a reciprocation between root and branch, and the strongest subject may soon be conquered by using this power with an unsparing hand. To illustrate this, we would point to the means sometimes employed to extirpate some of our worst weeds, when they prevail to an extent which precludes the chance of pulling them entirely up. For instance, the nettle, the dock, the bear-bind, or wild convolvolus, and thistle: who does not know that by an early mowing or cutting, and this repeated a few times, such may be eradicated without the labour of taking them up? We have known a vast extent of nettles thus destroyed; and for that predatory rogue, the "bear-bind," there is nothing like a beheading the moment it is up, and a constant repetition of the same through the season. This points to the power possessed by the tree manager in disbudding and stopping, or pinching; and it is good practice to go over the trees once a-week, pinching a few shoots every time, if necessary, until all the grosser shoots are gone over, which will bring the operator to about the present period: say to the end of June, when other measures should be resorted to. The trees, by this time, will have become moderated in their luxuriance, and training must be commenced. And now a clever selection must be made of the necessary quantity of fruitful shoots, both as leaders, and to tie down on the main stems—a practice we must continue to advocate.

Before proceeding to the training, we would here wish to offer a caution as pertaining to the pinching and disbudding; and that is, to refrain from pinching wood of any kind about the terminal point of each branch, or, in other words, about the leaders. The reasons for this were given at the commencement of this letter; the object being to draw that sap freely to the extremities which was in danger of being arrested and appropriated by the barren breast wood. This caution, of course, applies chiefly to old or bearing trees, in which the points have become lean through much bearing. Those who have been accustomed to watch the peach, the pear, &c., as we have, closely at all periods during the last thirty years, will readily know what we mean. The inexperienced must take the pains of studying their trees under different phases; they will find it like all the Creator's works, a very interesting study, and containing numerous points too apt to be lost to the ordinary observer.

Such things being duly attended to, the next point is to look well after all leading shoots, and to see them carefully trained. Before the end of July, many dashing storms may have to be encountered; and the young leaders, soused in heavy rains, are exceedingly liable to get broken. All leaders, indeed, should be "laid in" before Midsummer. And next, let a necessary amount of short-jointed spray be tied down or nailed on or between the main branches, taking care not to crowd them. In doing thus, an attentive eye must be had to the character of the young spray in all kinds of trees, for it differs much in character. It will be seen that we are generalising the matter; to handle every fruit in detail, would be either to tire the patience of our readers, or to preclude the possibility of handling in speedy succession other branches of fruit-culture. Yet a little particularising may be necessary. The best wood of the peach is of middling strength, neither succulent nor lean, and by no means of an alternate character. All such spray as produces axillary or subordinate side spray, necessarily at an advanced period, is to be avoided, provided better is at hand; it may be pruned back to two or three leaves, and left for the winter pruner Equally to be avoided are weak and lank shoots. In the pear, most of those young shoots which are predisposed to a fruitful habit, either cease to lengthen about Midsummer, or become thickened, hardened, and assume a brownish tint about that time, whilst what gardeners term "watery spray" will lengthen for weeks,

and will continue of a pale appearance: such pertain merely to a tree in the wild or untrained state; they are striving to become branches, which would, in their turn, produce fruitful spray after a year or two. As speedy and steadily-continued fruitfulness is the gardener's aim, of course such may be regarded as foreign to the object in view; they may be pruned back to three or four leaves; not quite so close as the peach.

Very similar proceedings suit the apricot, the plum, &c., care being taken to tie or nail down most of the compact short-jointed growths wherever room can be found, some on the old branches, and others, it may be, on the wall or fence.

The trees thus managed will, at the completion of these processes, present a surface uniformly clothed with foliage, yet in no part crowded The pinched or cut-back spray will stand in relief from the branches some three to six inches, and this will, in many cases, sprout again and again, a circumstance much dependant on the ground moisture of the summer. Enough for the present: the subject will be returned to in due time.

R. Errington.

HORTICULTURAL SOCIETY'S EXHIBITION.—June 12th.

At the end of one of the tents stood the newest and best plant at this exhibition, a new, hardy, evergreen, upright-growing Berberry, from the north of China, called *Berberis trifurcata*, and *trifurcata* means, literally, three tined, but the application is to the spines on the leaves. As I stood puzzled to know if this new Berberis was hardy, or where it came from, and all about it, my eye caught Mr. Fortune in the crowd, and thinking he might clear up the difficulty from his great knowledge of new plants, I made up to him, and he seemed as much pleased with my remarks on this beautiful Berberis as I was to get hold of him at the lucky moment. It turns out to be one of his own introductions from China, "But," says he, "did you see the other one?" "No," says I, "do you mean another *trifurcata?*" "No, but another species quite as new and as good; and as you are one of our Fellows of the Horticultural Society, I shall tell you their whole history;" and so he did, without reserve, but, like Mr. Green's Azalea, they are to be first described in our journal. The second one is called *Berberis Bealii*, after a gentleman named Beal, who, like Mr. Fortune, was a good deal in China, and had a celebrated garden at Macao. There is a fine camellia called after him likewise. I have said already that all Mr. Fortune's new plants from China are at Bagshot, with Messrs. Standish and Noble, and I must run down and see them some of these days.

Roses.—There were several collections of them exhibited, and some of the plants were surprisingly good, but not nearly so flush as we had them in May, nor were there so many new ones. *Emperor Probus* and *La Reine* were again the largest flowers, and *Chenedolle* was at last beaten out and out in its own section of July flowerers by *Paul Ricaut*. This Paul is among my selection of hybrid Bourbons. It is a newish rose, and this was the first time that I saw it in a pot. It is a splendid rose for that purpose; the colour a dark purple, and very likely out-of-doors it will come nearest to *Boule de Nanteuil* than *Chenedolle*, or, rather let us say, between the two, and that will make *Paul Ricaut* familiar to thousands. *Elize Suavage*, a tea-scented, and one of the best of them, was in admirable condition, from Lady Puller's gardener, Mr. Terry. It is a charming colour, which no one can describe; not a yellow, nor a buff, nor nankeen, but a mixture of the three. *Pauline Plantier* always puts me in mind of *Niphetos*, the best of them all for a bridesmaid; *Pauline* is not quite so large a flower as the other. *Barbot* is another fine rose, and being very nearly the shape and colour of *Bouchere*, puts you in mind of the tea-caddy; but neither *Barbot* nor *Bouchere* should ever be seen at a wedding; their faintish red, yellow, and coppery tints, are signs of bad luck or something worse. *Coupe de Hebe*, *Duchess of Sutherland*, and the *Malmaison* rose, you see wherever roses are exhibited, but *Noisette Lamarque*, one of our finest white roses, you seldom see very good in a pot; the best one I ever saw in that way was here, from Mr. Terry, who, although a perfect stranger to me, will excuse me for saying that his cut roses looked out of place altogether, from so good a rose grower, who can take off first-class prizes. It is all very well for the Covent Garden folks to exhibit cut roses, but I hope the day is gone for ever when a good gardener will think it any credit to cut a basket of rose blooms to send anywhere, except as presents to people who have no roses of their own.

Florists' Flowers.—The pot cultivation of roses is not the last triumph effected by gold and silver medals. *Pansies in pots* are now a regular thing, and at this show we had lots of *Pinks in pots*, but not florists' pinks; they were very gay though for all that, and very well bloomed, but not better than hundreds of gardeners in the country are yearly in the habit of flowering from March till they come in the open ground; it is the system that we must look at as the great improvement—bringing up everything in pots for competition, and leaving cut flowers for the tea gardens to make shield bouquets with. I was among strangers the other day, of whom some were gentlemen florists, but none of them knew me; I had on my Sunday clothes, and I was a little more spruce than usual, so one of them took me, or rather mistook me, for a half-pay officer, and out of him I got the grandest secret yet out about *Pansies;* I think I could now win a prize with them myself. Like all great secrets, it is very simple when you know it. Grow your pansies as large as it is possible that any one can do in rich free soil, with doses of liquid manure, thinning out flower-buds, and stopping the shoots (all this is as necessary for the pansey as it is for the grape vine); then, two days before the show, the plants must be allowed to flag for want of water—even the shoots ought to droop, and the flowers be collapsed. This is the moment to pick them for the show; there is no blood or sap in them, so you can handle them as you would Indian rubber lace; then, with a pair of compasses, draw a lot of circles on a sheet of paper or pasteboard, and fit the dried flowers with mathematical precision. When you have them all exactly in the right way, make dots on the paper where the footstalks join the blade of the flower, then a hole for every dot for the stalks to pass through; now put your pasteboard over a vessel full of water, and the footstalks of the flowers will dip into it, and feed the flowers till they are like to burst—they are then fit for exhibition; and the prize will be according to your dexterity in drying, ironing, and final damping.

Judges.—Societies may spend all their money in prizes, but without judges as upright and as independent as a Lord Chancellor, no good will come of the shows, be they for bullocks or for bull-eyed daisies. At this exhibition there was a good test for the judges in a collection of *Cape Heaths*, which, according to the rules, must be so many in number, and all of different varieties. Now, if you were to raise a seedling Greengage plum quite as good as the old one, and as much like it that no one could tell which was which, would it be really a new plum, or a repetition? This question is, in effect, that which the judges had to decide. A seedling Heath was so much like the parent plant as to disqualify the best grown collection of heaths at the show. That was certainly the true and lawful decision;

and if the councils were to be as strict in their rules as the judges are in applying them, we should, in a few years, see twice the number of species or varieties at each of the shows, both at Chiswick and at the Regent's Park; or, if the "collections" cannot be disturbed, in the names of Ray, Linnæus, and Jussieu, let us have a new prize altogether, and let everybody try to win it without distinction. The prize must be amongst the highest, if not the very highest—say for ten plants from the stove and greenhouse, which any three gardeners and three nurserymen would decide from time to time to be the most difficult to manage in England. Why is *Petræa volubilis* not seen at exhibitions? It is the next best to *Amherstia nobilis*, and grows as easily as an *Alemanda*. Mrs. Withers made a fine drawing of it in my parlour, for a coloured work at Birmingham, many years since. It was then the subject of remark with everybody, but being very difficult to flower, and no encouragement given for blooming such things, I believe the plant is now lost to the country, and an inferior sort called *Stapelia* is generally substituted for it in collections. This is only one instance out of a score, but it will explain my meaning; and I do hope the two great societies will step in and do something or other for the higher branches of cultivation; and if they do not, depend upon it Sir Joseph Paxton will do it for them at the Crystal Palace, and gardeners will go there in preference, to learn more about their business than they can now do at the old shows.

Pelargoniums.—There were five plants placed side by side, and whether their positions were determined by high artistic rule, or by mere chance, I could not make out, but I never saw five plants of any kind, or five beds in a flower-garden, so well put together; every one of them helped to set off the other, and very likely, if one of them was changed to the other side the effect of the whole was lost. Their names are *Bertha*, *Star*, *Centurion*, *Rosamond*, and *Gulielma*. I could look at them as they stood for hours; and I regret that I did not take the name of the exhibitor. The best geranium at this exhibition, according to my fancy, is one called *Magnificent*. It stood in Mr. Dobson's collection, and was probably raised by him and Mr. Beck between them, when Mr. Dobson was foreman, but now he is first man and master, and certainly his plants lost nothing by his rise in the world. I must get an introduction, and call on him some day. The flowers of *Magnificent* have the two back petals nearly black, with a white edging; the eye or bottom of the flower is white, and the front petals are of a fiery red colour, and slightly streaked. *Optimum* is also a very bold and capital new sort; very large, very dark at the back, high coloured, and streaky in front. *Queen of May* is another I should like to grow if I had a house of my own; orange-scarlet in front, dark back, with scarlet edges. *Carlotta Grisi* in the way of *Ocellatum*, but not so distinctly marked in the front petals, and marked down as a breeder for fancy bedders; and, on comparing the mulberry-coloured sorts, as *Statuiski*, with all the other selections at this great gathering, I could see plainer than ever why ladies call them "*such frights*." Some of them look like half-drowned witches brought on the stage to take your attention from the real thing, and still giving you the shivers to look at them. *Ajax*, *Loveliness*, *Purpurea*, and *Diadem* are the next best on my list of the most conspicuous ones, without any reference to their *circularity*. *Diadem* is a particularly striking flower; dark back, white eye, and a fiery red front.

Fuchsias.—The Fuchsias seem to have had their day, and disappear like moths and butterflies; and there is not the slightest question but this is entirely owing to the "trade" and the florists; for go into whatever large place you please in the country, you will find them by the scores; and they are the chief props of the conservatories, all over the country, and deservedly so—from the end of May to November; and for winter flowering there is no plant more serviceable than *Fuchsia serratifolia*, when properly managed; so that their own intrinsic merits keep fushias afloat in the country, after being swamped in London by stupid rules and exorbitant prices. I marked three as good ones at this show, and I think one of them will turn out the very best we have yet seen for the flower-garden; it is called *Perfection*, and, if it was not in flower, no one could distinguish it from the old *Gracilis*, indeed it is Gracilis all over, with flowers four times the size of the old one, rather a brighter red, and a better purple, it also reflexes very much; and if the habit is equal to that of *Gracilis*, this one fuchsia will make up for much of the disappointments we have had with them. The next is called *Model* (Banks'). This is in the way of *Carolina*, but a much better flower which reflexes much, and I think a better habit of growth for planting out. *Grandis* is the third, just intermediate between the other two in flower and habit, but does not reflex so much as they do.

Fancy Geraniums.—*Gipsy Queen* is the best of the newest exhibited here; it is a very near match for *Ocellatum*. This strain should be encouraged as much as possible. *Advancer* is the next best, and is from a different type. The old *Jehu* blood is strongly marked in it; but a much better seedling, in exactly the same strain, is at Shrubland Park—the beautiful bedder called, by permission, if not by request, *Sir William Middleton*; and whoever knows him knows the best judge of a bedding geranium in England. Mr. Ayres, of Blackheath, was the fortunate raiser of these, and of a lot more nearly as good, which he sold last year, and offered an independent prize for him who could grow them best for this season's exhibitions; and Mr. Robinson, a distinguished grower of all the family, won the cup at this show most triumphantly. The others in this collection are called *Conspicuum*, *Formosissimum*, *Caliban*, and *Mirandum*. With the exception of an author publishing a book on his own account, and at his risk, there is nothing that I know of which gives so much confidence to a purchaser as a man offering a prize for his own seedlings. *Conspicuum* is my next favourite after the strain of *Triumphans*.

There was a good bedding Calceolaria called *Golden chain*, the nearest to *Corymbosa*, the best bedder of them I had at Shrubland Park; and in a large flower-bed in this garden I saw an entire new species of Calceolaria, called *Chelidonifolium*, said to come to us from the Continent. I shall look closely after this new bedder, for at first sight it promises to be a first-rate thing, very dwarf, and plain yellow, but quite a different-shaped flower from all we have. I have no room to-day to tell of the best bedding plant at this show, but two years' since I would give ten guineas for a dozen of it.

D. Beaton.

WARM GREENHOUSES.

"Why do you not give us something now and then upon things in general, a sort of running commentary of what should be done and avoided?" is a question oftener put than it is easily answered. If we refer to the monthly calendar, we are told that is neither lengthy nor pithy enough. Speak of a *companion* to the calendar! "No, not exactly that; it is such a plummet-and-line, such a regular-succession A, B, C, affair, but a something between a calendar and a sober-sided article, a *compromise*, especially as that is so much in vogue—in fact, a romping gossip about things in general."

Would that I could oblige; but the task, I fear, would have to be intrusted to other hands than mine. I should neither know where to begin nor where to end. Writing here, after all, is just conversing with our friends—sit-

ting in a quiet corner when the bustle of the day is over. Glance at the listlessness apparent when general topics are simpered over, contrasted with the interest perceptible when one definite subject for the time engrosses attention. What a bore to all concerned to attend a public meeting where the speakers are left to things in *general*. Whatever the genius and the intellect congregated, they are confined by a network which they seldom can pierce. Arrangement and order can *never* be transgressed with impunity. Some minds can grasp a subject, and make it clear to others in a few words. The most of us can only undertake to explain what little we know bit by bit at a time. Even then the piece-by-piece system is generally the best in the end. The humblest in means, or mental power, may ultimately accomplish almost anything from concentration of thought and firmness of resolution. Give to a great genius the task of writing a short article on the vegetable kingdom, and give to a very ordinary intellect the task of writing a similar short article on a *broom stick*, and ten to one but the latter would be the most interesting and instructive of the two.

However numerous the subjects then introduced, I must have a *text* for each. For the heading of this article I am indebted to the following questions and statement:—"What should be the summer temperature of what you describe as a warm greenhouse? Should fires be used in cold and damp days, when even by closing the house the thermometer will not be raised much above 60°? Should air be admitted at night, and if so, should it be by the top-lights, or at the sides? Ours is a small lean-to house, occupied at present with such plants as *Acacia, Veronica, Lantana, Pimelea, Helichrysum, Gloxinia, Achimenes, Cactus, Calceolaria*, &c., a row of geraniums along the front shelf, with a few climbers against the windows at each end."

1st. *The necessity for giving artificial heat to a greenhouse in June.* In general cases this will be unnecessary. This has been an out-of-the-way season: in the first part of the month we had the general climate of April; the ground had never been heated, the atmosphere was cold and damp, and bedding things turned out, if they did not grow backwards, made no perceptible progress onwards for several weeks. For common flowering greenhouse plants, the lighting of a fire, unless in extreme cases, so as to give a great quantity of air, would be unnecessary. On the other hand, in such weather, where it was desirable to get azaleas and camellias after flowering to start into growth and set their buds early, a fire would have been of importance; unless, in such a season, keeping the house rather close would have been amply sufficient, and thus the greenhouse may be easily changed, by diminishing the air given, into a hothouse. This same closeness, accompanied by a humidity in the atmosphere, will be essential for such plants as *Achimenes* and *Gloxinia* growing freely.

2ndly. *With such a mixture of plants, how, when, and what quantity of air should be given?* For your *Acacia, Pimelea, Veronica*, &c., you can scarcely give too much air, in a flowering or growing state, from the present time to the end of September. Your house for them may be open night and day. If just pruned after blooming, *you may* give them the treatment mentioned for azaleas, &c. In fact, when growth is proceeding freely, they will do as well out-of-doors as within. Your geraniums must also now have air night and day, and it must be given back and front. The cooler you can keep them, and if a little shaded, the longer will they remain in beauty. As to calceolarias, wherever they are, they cannot be kept *too cool* until the middle of October. Splendid specimens of the best kinds may be made by giving extra heat in winter. From May and onwards they cannot be kept too cool, or have too much air, provided it is not breezy enough to break them, or scatter the flowers. Soft water, kept in the shade, will even be better for them than water heated powerfully by the sun. Sickly leaves and myriads of insects are the result of our coddling; but your gloxinias and achimenes would look miserable under such treatment. When in bloom, they will stand more air; when growing, none should be given at night, unless the temperature outside is 60°, and even during the day the air should be confined to moving the top sashes when the heat rises above 75°, and not by opening the sashes near the sides where the plants stand. But

3rdly. *How are we then to manage to attend to the interests of each tribe of plants?* In various ways, according to your means. First. Make your house the recipient of plants that require similar treatment at the same time. Thus you decide on a warm greenhouse in winter. Well, this will just suit *Cinerarias, Bulbs, Primulas*, and *Epacris* coming into bloom. It will just suit your best stubby plants of geraniums and calceolarias. The two latter will come into bloom early, and the same may be said of your *Acacia* and *Pimelea*. Your *Lantana* will just be in its element, and if freely pruned last autumn will be a gorgeous object in even a rather close house all the summer; it will not get drawn like an acacia or a pimelea. When such hard-wooded plants are kept in a house all the summer, the house must be open and airy. By this time they will have been making fresh growth, and may be turned out of-doors, first into a shady place, and then right in the sun, defending the pots from its rays; or you may place them in any sort of cold pit. By such means, you may appropriate your house for several months to a class of plants that require a moister and closer atmosphere, such as *Gloxinias, Achimenes, Torrenias, Thunbergias, Cockscombs*, and tender annuals. To do this well, you would, in most cases, require the assistance of a slight hotbed to start them in April. Your cold pit, with a little manœuvering, can thus be made a cold or a hot pit by turns. The beauty of all these things would be going when it would be necessary to bring back again your hard-wooded plants. *Achimenes* will bloom under the same circumstances as hard-wooded plants in bloom in a house, but they cannot be grown under such circumstances. Still less would the close atmosphere they require, then suit *Geraniums* or *Calceolarias* in bloom. Both of the last—and especially *the* last—would thrive better under an airy awning out-of-doors than in any house at this season. But—

Secondly. "I have no pits, no frames, and no place to put my plants out-of-doors." Then, first, you must limit your plants to those that do not require treatment so different as a *Pimelea* and a *Gloxinia*; or, secondly, you must shut off the end of your house next the furnace, in order that you can maintain a close, moist atmosphere to set these tender things a-going; and the same place would be a capital position for starting hardier plants into growth for a week or two after pruning. Never mind if the flue or the pipe passes right through the house, with a stop-cock the extra heat among the hardier plants can be easily counterbalanced by additional air, and sprinkling the floor with water. By divisions, we can have as many different circumstances in our pit as there are lights. But, thirdly, you do not wish to divide your house, and yet you wish such a variety as you indicate. Then your only chance is to classify your plants, and give air only or chiefly at one end, keeping the other as close as you can. This is what I often do myself. Just now, in the end of a house, with many hardy things in bloom, there is air on back and front, night and day; in the other end are *Azaleas* and *Camellias* done flowering; the sashes opposite these will not be opened for six weeks to come. I have grown achimenes and gloxinias in such circumstances very fairly without assistance from a hotbed. The tubers were kept in dryish earth all the winter; were

placed in pans in the middle of April, when the sun was gaining strength; were set on some close, opaque medium at the warmest end, and there covered with a hand-light, exposed as much as possible to the sun. This light, after vegetation was progressing, was only tilted in the middle of the hottest days; was always closed early in the afternoon; and, if the night was at all cold, was indulged, in addition, with a night-cap of paper or calico. The hand-light could seldom be dispensed with before July. When in bloom, the achimenes will stand a fair amount of air; gloxinias always like a humid atmosphere, even when in bloom, and in such a position should be humoured by standing on damp moss. Few things answer better as cut-flowers in small glasses; but if without hothouse or hotbod, and the above care being deemed too troublesome, they had better be dispensed with. With your present collection of plants, the following may be your arrangement:—Give air at one end of your house; give none at the other. Place at the open end, exposed to air night and day, unless when very windy and stormy, your calceolarias in bloom, then your geraniums, then on the stage above them, as near to the place where the top sashes open as convenient, your hard-wooded plants, growing and in bloom; then, between these and the extreme of the close end, your Lantanas, and such plants of the hard-wooded family as have had their flowers and extra wood removed by pruning; then your gloxinias, and such plants as require a higher temperature and closer atmosphere; as they like a little shade, between them and the glass may be placed your cactus out of bloom, as a preparation to their standing out-of-doors in August, or the driest and sunniest part in the house. When the calceolarias have done blooming, the coolest and shadiest place will suit them, and thus you will get plenty of young plants, and escape the spider and thrip. The geraniums, when done blooming, must have the *sunniest* and *driest* place you can command, either in-doors or out, to ripen and harden the wood,—an essential necessary for vigorous growth when cut down, and for obtaining strong, healthy plants from the cuttings. R. Fish.

NEW STOVE PLANTS.

(*Continued from page* 179.)

Æchmea miniata (Glowing-red Æ.).—The Æchmeas, as is well-known, belong to the Bromelworts, amongst which is the famous pine-apple, the king of fruits. The Æchmeas approach very nearly to that section in which that fruit-bearing plant is placed. In this genus there are two additions of great beauty, namely, *Æ. miniata*, 21s., and *Æ. Miltonii*. They are very useful plants of decorative interest, from the fact of continuing in bloom for a long period.

Balsamina latifolia alba.—This plant has pure white flowers, produced all the summer long, and also green leaves and stems, differing in those respects from the species. 7s. 6d.

Bilbergia.—Several fine species of these Bromelworts have been imported lately. They are to be commended for their easy culture, fine foliage, and handsome flowers; their names are *B. Leopoldii*, 21s.; *B. Duc de Croy*, 42s.; *B. morelliana*, 42s.; *B. rhodocyanea*, 21s.; *B. splendida*, 42s.; and *B. vittata*, 21s. Plant collectors that have plenty of space should procure all these.

Rhodoleia championii.—A most beautiful evergreen shrub, with roundish foliage, and large, beautiful, rose-coloured flowers, produced freely at the ends of the shoots. The flowers are semi-double, something like those of *Pyrus japonica*. It is a truly handsome plant, but as yet very scarce. 105s.

Siphocampylos.—This fine genus of handsome winter and early spring-flowering plants has lately had some fine species added to it. Though they will exist in a greenhouse, yet their proper place is in a stove moderately heated. *S. amœna*, a very neat pleasing plant, with moderate-sized foliage, and deep-rose-coloured flowers, produced abundantly on the terminal shoots. 5s. *S. leucostoma*, flower red, tipped with white, very pretty. 3s. 6d. *S. penduliflorus*, flowers drooping. 5s. *S. reticulatus*, leaves veined, a desirable new species. 5s. *S. scandens*, a climbing species, free flowering. 5s.

Sinningia punctata.—This is an improvement even upon the beautiful *S. guttata*. The flowers are larger, the spots more vivid in colour, and of a larger size, and, in addition, they have a beautiful yellow throat. 5s.

Stephanotis oblisii.—An addition to this charming genus will be gratefully received by the lovers of beautiful, fragrant, stove climbers. Unfortunately, we are not in possession of sufficient information about this said-to-be-new species, but it is in the country, and will soon, no doubt, be proved. Its price is high as yet. 105s.

Tacca integrifolia (Syn. *Assacia cristata*).—This is a curious, interesting plant. Our readers will remember, that our friend, Mr. Beaton, described this plant in his report of the Chiswick and Park shows. Though not of showy colours, yet the peculiar form and colour of the flowers renders it a curious, desirable plant. It is not yet on sale, but from its habit there is no doubt it will soon be increased.

Puya Funckiana.—That fine plant, the *Puya Altenstenii*, will be a passport for this new species into favour. We know as yet little about it, but it is in existence in this country, and we hope soon to give a better account of it. This genus belongs to *Pourretia*.

Tillandsia vittata (Ribbon-leaved Tillandsia).—Another beautiful addition to this fine genus, but we have not yet seen its flowers, though they are said to be very beautiful. 21s.

T. carnea.—Flesh-coloured flowers; very pretty. 21s.

Vriesia psittacina.—This is a fellow species with that lovely plant the *Vriesia splendens*; though its foliage is green throughout, and therefore not so beautiful as its fellow, yet it does not yield in beauty in its flowers; they are produced on spikes, in regular order, and are of a bright, shining, orange and yellow colour. 21s.

Such is our very brief notice of the new or rare stove plants in the nurseries round London. We are much astonished frequently at the immense number of new plants which the industry of collectors travelling through hot unhealthy climes, send over constantly to this wealthy country. Could we do this without wealth? And is not wealth wisely, or, at least, innocently, employed in building and keeping up habitations for such plants? Who can tell how many gardeners are employed, how many glass manufacturers, carpenters, iron-boiler and iron-pipe makers, brick and stone masons, painters, &c., are employed by the gentry of the country in order to grow the plants and fruits of foreign countries? Who can deny that this love of novelty in plants is wisely implanted in the human heart, and the good that the indulging this innocent luxury does by giving employment to so many thousands of our countrymen? T. Appleby.

CUT ROSES.

(*Continued from page* 194.)

Conveying to the Exhibition.—To a person who had never seen a stand of twenty-five, or fifty, or one hundred cut blooms of roses, the carrying them to a place to be exhibited would seem simple enough, and a matter scarcely worth a thought. He might think, the growing of them well, and having plenty of fine blooms to cut the day before, would be quite sufficient to ensure the prize; all that he would want would be a sufficient

number of bottles, ready filled with water, to put his roses into. We have seen beautiful roses, cut perhaps only that very morning, put into a basket carefully enough, with damp moss, and carried by hand as gently as possible, placed in bottles judiciously, and put in competition with others conveyed in the way we are about to describe, and have wofully failed. And why? Because, carried in baskets ever so carefully, the want of water at the base of the stem, and being so many hours without that sustaining refreshment, causes them to lose their freshness and beauty in a great degree, and in many instances to drop their petals.

To prevent this it is necessary to have oblong boxes, made with a moveable cover; this cover or lid to have sides to it deep enough to keep the lid clear from the roses. The lower part of the box should have a division board resting upon a ledge of wood; this board should have holes in it wide enough to admit tin or zinc bottles through them, and these bottles should have a flat rim, wider than the hole, for them to rest upon the board, and so prevent them slipping through. If the bottles fit pretty tight, so much the better; but as the board is moveable and can be lifted out, should any of the bottles feel loose they may be wedged tight with chips of wood from the underside. The lower part of the box should be deep enough to allow the bottles to hang clear of the bottom; if this were not so, they would be pushed upwards, and the roses spoiled. The box being so made, and fitted with bottles placed at such distances as to allow the roses to be put in them so as not to touch each other, let the whole have two or three coats of paint, the last being a pleasing grass-green. This ought to be done time enough to allow the paint to get perfectly dry, and then the box or boxes will last for a man's life-time.

This box or boxes, for more than one will be necessary when a large number of roses are required, having been duly prepared, and the day previous to the exhibiting one having arrived, then examine the roses in the garden, and cut such as are rather more than half-opened. Some Societies offer prizes for single blooms only—one of a kind; this is not judicious, for it is always desirable to see the mode in which they bloom. To do that they should be exhibited in clusters of at least three blooms on one stem, each to be as much as possible in different stages of development—the fully-grown bud, the half-opened, and fully-blown flowers. The exhibition of these lovely flowers then becomes exceedingly interesting and instructive, giving the spectator an opportunity of observing and noting their beauties in the different stages of blooming. The exhibitor will, as a matter of course, be guided in the selection and cutting his blooms by the schedule. He should first fill the bottles three-parts full of water, and take the box into the garden; then choose the best flower, or bunch of flowers, as may be required, put them into the bottle at one corner, and mark that with a number corresponding to the name, say, No. 1, *Coup d'Hebe;* then cut the roses for the second bottle, mark it No. 2, *Géant des Battailes*, and so on, arranging the colours with taste and judgment, so that the whole shall form a blended pleasing composition. If a few leaves are placed in each bottle, round each kind of rose of the same tree, by way of garnishing, they add greatly to the general effect. As soon as the box is quite full, remove it into a cool room, and fit on the lid just before commencing the journey. If you travel by the rail, see them placed carefully in the parcel's van yourself, for the porters are not very particular how they handle or place such perishable or easily-injured articles. If you can get them placed under the seat in the same carriage you travel in yourself, so much the better, you can have your eye upon them all the way; but if they are too large for that, have them put upon the floor of the parcel's van; they will not be injured by having other parcels put upon them half so much as they would if put upon other parcels, and be knocked about probably at every station to get at the luggage underneath them. Then, at the terminus, take care to be at the van the very first, and see the roses are lifted out the right side up, and carefully carried to a cab or omnibus, and placed upon them equally as carefully. All this may seem trifling and unnecessary, but we know how needful it is to be on the look-out, and how grievous it is to find, for want of a little care bestowed at the right moment, your blooms, or at least part of them, so injured by, perhaps, a fall or a turning topsy-turvy, as to render them unfit for the exhibition. If the exhibitor takes his own conveyance even, the same care must be taken; but that he will do of course. It is those porters on the different stations and at the terminus that are to be watched and warned. It is them we fear; for the hurry and bustle at the time is often so great, that without thinking, or, perhaps, knowing the consequences, they throw about a box of choice roses with as little care as they would a box of soap.

Well, then, all this care having been duly exercised, you arrive at the place of exhibition in good spirits, and firm assurance that your stands of roses are all right and in good order; but just unfasten the lid, and take a good peep at them, you will then be sure that they are so. And if due care has been taken to be there, as in the case of roses in pots, an hour or two before the time appointed for the censorship, let the lids be fastened down again, and placed upon the table appointed for them; then seek for the entry office; have your name and what you intend to compete for written ready upon a slip of paper; hand this to the entering clerk, and obtain from him the cards to place to the stands; then return to the exhibition tent, and if the time has come, take off the lids, observe the blooms, and trim and set them off to the best advantage, so as to show every bloom to the eye; place the cards to them, and leave them to the skill and patience of the censors.

In our next, we shall treat upon the raising of new varieties from seed, which will complete the series of our essays upon this all-worthy and lovely flower.

T. Appleby.

CULTURE OF SUPERIOR CELERY.

There are few things in which gardening skill is more required than in the production of good, useful celery, in such a succession as to carry on the supply for some nine months out of the twelve. It may be true that a something bearing the name of celery may be had during the other three months likewise, but this only resembles superior celery by the flavour which it is capable of giving to soups, &c., during the early summer months, which we shall state to be from the middle of April till the middle of July. During this period, the abundance of other description of salads renders the want of good well-blanched celery a matter of less moment, yet all gardeners try to have some of it as early as they can; and though its first appearance at table is less an object of attention than that of "*Peas*," still a considerable interest attaches to it, and being a more general favourite than many other things, it deserves all the attention and encouragement that can be given in its progressive career; but as we have at various times, for the last few months, urged the propriety of assisting the earliest crop in every mode possible, we need say no more here than again advise the use of liquid manure, which seems more peculiarly adapted for celery than anything else. We now come to that more essential portion of the quantity cultivated, "the main crop," and preface our remarks by a few observations on this vegetable generally.

It is common to refer the parentage of the varieties now in cultivation to a strong-smelling umbelliferous plant, growing wild in our salt marshes; be this as it may, we may say that the strong smell of this wild plant (agreeable or otherwise) is much modified in its progeny. This is, we believe, in accordance with one of those laws to which there are few exceptions, and certainly the cultivation, which enhances the beauty of any one plant, is generally at the sacrifice of some other of its qualities—witness the carnation—the parents of which are said to be found wild in several places in England; and yet the fancy kind of the enthusiastic florist have so far lost their native hardihood as to be unable to endure the winter in sheltered gardens, in districts not many miles from where their parents have been able, through many ages, to maintain a successful struggle with herbage of a coarse and robust character. So much for constitution being sacrificed to improvement; but then the advantages we gain are tenfold to those we lose, and, to a certain extent, we compel the "well-bred" progeny to obey our commands; whether it be a carnation for a flower show, or a head of celery for the salad bowl, both are alike the produce of well-directed skill, by which some of the faults or propensities of the original have been overcome. In celery, the inclination to run to seed the season it is sown has certainly been combatted with success, except that now and then a spurious specimen runs away; but in most other cases, it may, with proper cultivation, be depended on as not likely to run until early the next spring, and the object of cultivators is to retard that as much as possible, both in the selection of kinds planted, and the way in which it is managed. On this latter we beg to offer a few remarks.

It is well known that the ground producing the best celery is not always the most suitable for keeping it in good order to the latest period at which celery is capable of keeping; that degree of richness in the ground, so essential to robust growth, is at variance with the preservative principle. Slugs and worms of every description prey on it with impunity, so that very early in the winter the once-beautiful-heads are a mass of disfigured objects, perhaps not one in ten fit to send to table; this is almost certain to be more the case in a mild winter than in a severe one; so that for the welfare of the last crop other means must be adopted than those deemed advisable for the "first or principal one." We shall, however, begin with the main crop, which includes all intended for use from early autumn to past mid-winter; in other words, from the beginning of October until the end of February, which embraces the period when its uses and quality is supposed to be greater than before or after.

Omitting everything relative to its being sown early in spring, as due notice was made at the time, we shall suppose the young seedlings to be progressing, and to have arrived to the size at which they can be handled with comfort. Every one who has had any experience that way can tell when such plants are fit to prick out, and it is often a matter of anxiety that the weather is not always favourable at the precise time, as the plants are generally sown so thick on the seed-bed as to draw each other if left unthinned for any length of time. The cultivator must, in this case, exercise his own judgment as regards the probability of there being rain in a day or two after his plants are the proper size; in the meantime, he must prepare his nursery bed or ground, which ought to be in some fully-exposed situation, and if not already rich, it ought to be made so with a liberal allowance of well-rotted dung, or leaves in the last stage of decomposition. Should, however, the weather appear to be settled dry, it would be better to plant or prick out a quantity at once, rather than allow them to become drawn and spindling on the seed bed, and have recourse to shading as a means of saving them from the scorching effects of summer's sunshine. A few pea stakes laid over them answers very well, with mats occasionally in the middle of the day; this, of course, may be dispensed with gradually as the plants take hold, and probably the weather may become more dull. In a usual way, young celery plants grow pretty freely, and the loss in any given piece is really less than in most other things similarly treated. If all go on well they will make very good progress after the first week or ten days, and will soon be large enough to occupy the trenches or places allotted to their after, or principal growth. This brings us to that important feature in celery growing—the formation of the trenches, about which much has been said of late years.

Previous to the last twenty or twenty-five years celery was invariably grown in single rows, planted in trenches, or rather ditches, more or less deep. The utility of a deep ditch is that it affords a greater amount of soil wherewith to earth up the crop the required height. Some one, however, found out that the soil at the bottom of this ditch was not so good as that nearer the top or surface of the ground, and loudly exclaimed against consigning a vegetable requiring such nourishing diet to the questionable capabilities of the ordinary subsoil of the garden when grown, and, consequently, advised its being planted on the surface, or with little excavation. This, no doubt, was attended with a more speedy growth at first, and even throughout; but then, some other mode in place of the old one must be adopted to retain the earth heaped against it in its position, so as to insure its blanching, and, consequently, straw bands, moss, litter, wooden boxes, and earthenware tubes or pipes were all used in turn, with more or less success, but the result proved these means to have been, in most cases, too expensive, improper, or unsuitable, as they never got into general use, and plain earth was after all found the cheapest and best for all ordinary purposes, and means were accordingly taken to improve the soil in which it was planted, by deepening the trench or ditch, so as to allow of a good quantity of suitable soil being thrown in, enriched also by a liberal allowance of well-rotted dung; assisted afterwards by what was of not less consequence, the application of liquid manure. This system is, we believe, the one most generally adopted in the growth of the great bulk of *Celery* offered for sale in the London market, as well as that grown in private gardens; but another mode has been adopted by some, which we will give in another week, as well as some notices of the time and manner of earthing it up, and other matters connected with its keeping. J. Robson.

PRACTICAL OBSERVATIONS ON THE MANAGEMENT OF BEES.

By Henry Wenman Newman, Esq.

(*Concluded from page* 201.)

THE QUEEN BEE.

The queen bee is different in many particulars from her subjects. She is not so vindictive as the workers. How the Divine Wisdom has wisely ordered this is evident, for if the queen was as vindictive as her subjects, she would be in danger of her life every time she was rudely disturbed. I have had many live queens in my hand. In hiving a swarm in one of the straw hives (a second swarm), they fixed in a most awkward place, the but of a plum-tree. I endeavoured, in vain for some time, to get the bees to ascend, but, at last, observing the queen, I seized her, and gently placed her inside the bottom part of the hive; she ascended instantly, and the whole of the bees, in about three minutes, followed her; I then allowed them to work until the evening, when I removed the hive to its destination.

The queen's wings are much shorter than those of the workers, and many swarms are yearly lost in consequence

of an old queen, with worn-out wings, going out with the first or best swarm. She does not always go out with the first swarm, but very frequently. I never saw the working bees kill a queen. They will prevent her from coming into a strange hive if they do not want her, but they will not attack her *offensively;* so that what some writers assert, that the queens only kill each other, may be true. I have found dead queens often on the ground near a hive after swarming; but I never observed a worker carry off a dead queen as they do a brother worker. A poor labourer of my own, in describing a swarm which went off and returned to the hive, said, "Yesterday, sir, that hive swarmed and went back; about an hour after, I found a small cluster of bees on the ground, and in the midst of them was a queen, and the bees *did* worship her." She could not fly.

DRONE,

As well described by Butfer, is "a gross, stingless bee, that spendeth his time in gluttony and idleness, living on the sweat of others' brows. In the heat of the day, he fleeth abroad, aloft and about, and that with no small noise, as though he would do some great act." In fact, he is like the "Bond-street lounger" of the great metropolis among Englishmen; he does not condescend to make his appearance until the afternoon, and makes a great swell for a short time. They have not the power to gather honey in the fields, and it is only in the hive that they feed. I have my doubts whether they are not of more use than many of the modern writers assert; they certainly increase the heat of the hive; and in swarming time, a considerable number of them go with a swarm, and they enter into the spirit of the new colony, for they may be seen the very next day going in and out.

The drones never rest on a flower, nor go in search of food, and seldom fly above 100 to 200 yards from the hive, except when they follow a young queen in the crowd at swarming time. I never observed a drone settle in my life, except from complete exhaustion and fatigue, when by himself. I have watched them most narrowly for many seasons, during the warm weather in July, when they are in their "hey-day." One singular fact is, that the working-bees seem not to molest them at certain times, when they are put into a strange hive early in the season, although, if a strange working-bee should attempt to enter, they immediately attack it.

Having brought my remarks nearly to a conclusion, let me ask—Who is there that does not admire the wonderful instinct of bees; the astonishing mechanism of the combs, so beautifully described by various naturalists; the insects' never-ending perseverance; their discrimination; their sagacity? Well, indeed, might Virgil exclaim in his enthusiasm, that they had "partem divinæ mentis" (a portion of the divine mind).

The study of the insect tribe is a fund of entertainment to a contemplative mind; and even this small portion of animated nature, in the history of the bees, the wasps, the hornets, and the wild bees, ought to impart to us some idea of the stupendous attributes of that Great Being who, in *His* infinite wisdom, formed them all. Well might the venerable Mr. Kirby exclaim, in his "History of the Wild Bees of England," "Can we consider this curious history without adoring that Divine Wisdom which teaches these diminutive creatures to provide in so wonderful a manner for the security and sustenance of their young? Who is it that instructs them to bore a fistular passage, either under ground, or in the trunk of a tree, for the reception of their nests? What rule do they take with them to the shrub from which they borrow their materials to assist them in meting out their work, by which they cut some pieces into portions of an ellipse, others into ovals, others into accurate circles, and to suit the dimensions of the several pieces of each figure so exactly to each other? Where is the architect who can carry impressed upon the tablet of his memory the entire idea of the edifice he means to erect, and without rule, square, plumb-line, or compass, can cut out all his materials in their exact dimensions, without making a single mistake, or a single false stroke? Yet, this is what these little insects invariably do, and thus teach us how much more wonderful and certain instinct is than all the efforts of our boasted reason, which, after many painful processes, interrupted by numerous errors and failures, and by a long train of deductions, cannot arrive at that expertness and certainty which these creatures manifest spontaneously, working at all times with unerring precision. What is this instinct but the teaching of the Almighty, the manifestation of His eternal wisdom infinitely diversified, sustaining, directing, impelling all things, and making all things work together for the good of the whole, which, like its great emblem and instrument, the light, acts everywhere and upon all, and while it guides the planets in their courses, directs the minutest animalcule to do those things that are necessary to its preservation and the continuance of its kind."

CROSS-BRED POULTRY.

Though I am a great admirer of the pure Cochin-China fowl, I am very much disposed to think, that by crossing the breed with our own domestic or barn-door fowl, we should acquire a more generally useful, as well as a more profitable kind of bird. Those who are desirous of obtaining prizes, and are fond of distinctions of that sort, must, and will be very particular as to the purity of the blood, but for those who breed for the spit, I recommend a good collection of common hens with cocks of the finest and largest Cochin-China breed, in proportionate numbers; say a dozen hens to each cock. I find the chickens more healthy and stronger than the purer breed, and altogether *more generally useful* I have my fancy birds also, but we cannot eat our pets. In the collections I have seen, I have found most of the young chickens almost free of any plumage—I mean of six weeks or two months old. Now this, I was told, is a proof of their good breeding, but I consider it as no recommendation. Fowls are bred as food; and as they ought to be ready for the spit at three months old, I do not think it any recommendation when they only want trussing and skewering before they are put down to the fire to roast; they do not look wholesome. But I very strongly suspect that this deficiency of plumage is no proof of the purity of blood,—on the contrary, a proof of complaint in the blood caused by overfeeding, for the gentleman who showed me his stock, stated that animal food was given to his birds. Now, I have known parrots, jays, magpies, and even cuckoos, in a domestic state, fed on animal food, as bare of all plumage as possible, so as to render them the most hideous and disgusting objects in the world. I have a very fine Cochin-China male bird, bought at the sale spoken of in my last communication (page 173), and he is so ragged in his plumage as entirely to spoil his appearance. I attribute this to the animal food he has had given him since he was hatched. In other respects, he is a magnificent fellow; and while speaking of him, I must relate something that tells greatly to his advantage. I had a hen with five young chickens which were nearly fledged, which had been kept for a few days only in the same yard with him. Thinking the chickens old enough to take care of themselves, I turned the hen into the general poultry-yard; and the young ones, on being separated from their mother, at first complained most bitterly, but they soon found a substitute in their gallant friend, who kindly nestled and adopted them at once as his own. It was amusing to see him bending his long legs, and lowering his short wings, to cover his adopted family, whilst his silly-looking affections contrasted so oddly with his usual hectoring insolence. I must not omit to render illustrious, by means of your popular Journal, my favourite hen, *Betsey*. The name of Betsey has become popular among Cochin-China fowls, as having been adopted by our gracious Queen for one of her pets; and we all now, as loyal subjects ought to do, *keep our Betseys*. My Betsey is as handsome a Betsey as anybody's Betsey. Her colour and her shape are perfect, and she presents me with a beautiful egg *daily*, and this egg is a perfect curiosity as to colour. It is a fine salmon colour, inclining to chocolate at the small end. Her eggs are held sacred, and never applied to any other purpose than the increase of her descendants. I have several of her chickens, which promise to be great beauties.

I see, on turning over the leaves of your last volume (vol. vii. page 389), you ask in what manner *greaves* are best used for feeding poultry. Though it is some weeks since the question was asked, it may not be too late to inform you that I have pieces of the cake boiled into soup, which I

thicken with grains, barley, or pollard, and that the fowls eat it greedily. I do not give them it more frequently than every other day, as it might be too fattening; and I do not give it to the very young poultry, thinking it may be too strong for them, and especially might not improve the flavour of those intended for the spit. I am also able to inform you, that there is a person in the neighbourhood of St. Paul's Churchyard who sells them in cakes, giving directions how to use them to the best advantage for that purpose; inasmuch, as it was on reading his advertisement in the *Times* newspaper that I determined to try them. When I can get hold of a file of the *Times* newspaper I will look for the advertisement and send it to you. It is headed, I think, "Eggs for the Million," and professes to be a receipt to make hens perpetual layers. I do not think it has had that effect on my hens as yet, but time will show. I admire much the spirit of good nature with which your Journal seems to inspire your readers. It is pleasant to see so much readiness to oblige one another as is displayed in so many instances; and it is in humble imitation of that spirit, that I propose myself the pleasure of procuring the information you require; and in proving that good nature is infectious, I hope it will encourage you in establishing a certain fraternity, or rather a generous rivalry in all those pursuits which your Journal illustrates so well.—A BRIGHTON SUBSCRIBER.

HARDY PERENNIAL PLANTS.
No. 2.

THE PENTSTEMON, ITS SPECIES AND VARIETIES.

IN my last paper I gave some hints as to the culture of *Pentstemon gentianoides*, and its varieties; in this, it is my intention to direct attention to some of the most ornamental species and varieties of this extensive genus not comprehended in that section.

The flowers of all the *Pentstemons* are pretty, but some are highly ornamental, and enduring decorations to the flower-garden, for many of them bloom from May to October. It is also a family that comprises many colours—crimson, purple, scarlet, rose, pink, blue, and white. There are also many of various habits of growth; some shrubby and others herbaceous. The following are deserving extensive cultivation, and should be in every collection.

P. pubescens (hairy). Native of North America; 1 ft. high; colour, lilac-purple; blooms in August and September; of a very neat, compact habit, and showy appearance.

P. glaberrimum (smoothest). Native of Columbia; 2 ft. high; colour, blue-purple; blooms from June to October; of rather straggling, shrubby-like habit, but valuable for its lively colour, and length of time it continues in bloom.

P. heterophyllum (various-leaved). Native of California; colour, yellowish, tinged with purple; height, 2 ft.; flowers from June to October; of shrubby habit, and, from its colour, of showy appearance.

P. diffusum (spreading). Native of North America; colour, purplish; height, 1½ ft.; flowers in September; a free-growing, hardy species.

P. Scouleri (Scouler's). Native of North America; colour, purple; height, 2 ft.; flowers in May and June. A very compact, perfectly shrubby-growing species, and large plants assuming the character of a dwarf evergreen shrub.

The above five kinds are of easy culture, preferring a light loamy soil and open aspect. *Scouleri* and *pubescens* are well adapted, from their neat habit and being abundant bloomers, for bedding purposes; the others, being of more straggling growth, require supporting with sticks, and form useful objects among mixed beds or borders.

The following are herbaceous in their habit of growth, dying down close to the ground annually, and forming fresh shoots for the next year's growth under ground. They require to be grown in a situation thoroughly drained; for, although nearly all the species are perfectly hardy, an over-abundance of wet during the winter season about the roots generally proves fatal to them.

P. atropurpureum (dark purple). Native of Mexico; colour, dark purple; height, 1 ft.; blooms in July. One of the best of the herbaceous kinds.

P. pulchellum (pretty). Native of Mexico; colour, lilac-purple; blooms in June; height 1 ft. A very pretty ornamental species.

P. ovatum (egg-leaved). Native of North America; colour, blue; height, 1 ft.; blooms in July. A beautiful plant for rockwork; evergreen.

The following, although not perfectly hardy in many situations, prove perfectly so in others, and from their peculiar beauty demand particular notice, namely:—

P. Cobæa (Cobœa-like). Native of Texas; colour, a mixture of white, purple, yellow, and rose; height 2½ ft.; flowers toward the autumn. This fine variety, although it has been in cultivation ever since 1835, is still comparatively rare, being the most difficult of the whole family to grow. It is generally found to succeed well in a light soil, composed of turfy-loam and peat, or leaf-mould; and to secure its living through the winter, it should receive the protection of a frame during severe weather. None of the Pentstemons are more susceptible of too much moisture than this variety.

P. azureum (blue). Native of Mexico; colour, light blue; flowers in June; height 1½ ft.; a species of recent introduction, of somewhat shrubby habit, and valuable on account of its lively colour. It is of easy culture, and when well established will stand the severity of the winter without injury.

The above may be easily propagated by cuttings of the young shoots at almost any time of the year. Those shoots selected should be neither old nor quite young, as those of moderate hardiness strike best. During summer, the protection of a hand-glass is all they require in some shady situation selected for the purpose. At other times of the year a slight bottom-heat is necessary. All the above seed freely, and raised from seed make good flowering plants. The herbaceous species are easily propagated by divisions as soon as the young shoots begin to grow.

JOSEPH HENRY KNIGHT, *Battle*.

TO CORRESPONDENTS.

TROPŒOLUM SPECIOSUM.—E. M. has obliged us with the following: "I sent a communication a few weeks ago about a *Tropœolum speciosum* which has succeeded with me so well that I thought it might be worthy of some notice. I have only just seen your note at page 156, in which you say you would like to know the exact locality and soil in which my plant has thus prospered. I live in a very cold part of Cheshire (near Congleton). We are near the Macclesfield hills, and exposed to cutting east winds. The thermometer on the night of the 29th of May indicated 25°; the Tropœolum was very little if at all damaged, though every potato in my garden was cut down. Our soil is very light and dry—a gravelly sort of sand. The aspect of my house is due south; and the corner in which my little favourite dwells is a broiling one at mid-day, but sheltered by a projection from the rude west wind. I have only to add, that finding it do so well, I have never ventured to meddle with it in any way, nor has the soil about it been renewed since it was first planted in the autumn of 1848. I train wires in every direction for it to creep up; but it rambles still further on its own account among the ivy, from the dark leaves of which the bright scarlet little flowers peeping out on all sides have a most beautiful effect." We cannot learn anything about *Mason's Hygrometer*.

GREENHOUSE (*Rector*).—Yours is one of those mixed cases in gardening in which it is not easy to advise safely. Statements concerning such things are seldom so complete as to enable the adviser to give full and complete advice. With the combination you mention, two questions present themselves; either the vines must be separated from the too warm air, or the pines must be isolated. Some old practitioners in this way used to have a second set of front sashes, adapted to the rising angle of the roof, at about some two or four feet from the frontage, and these were placed perpendicularly on some kerb-stone or base provided, thus cutting off a portion of the interior frontage of the house from the influence of the piping; the vines being lowered and wintered within this cool and detached portion. Now, this answers very well, but much depends on the "fittings" of your interior. We fear your glass frame within the house would be an awkward thing to carry out; and question if the heights, widths, and piping-levels would permit you go to through with it. These complicated cases are, at the best, awkward things to deal with.

BEES (*C*——, *Leicestershire*).—There has not at present (June 25th), been any honey-gathering weather, and until there is, your bees will not work up, either in the glass or small hive. If there come fine, dry weather, you need not fear having your supers full, if the long-continued wet has not already caused your bees to swarm.—J. H. P.

BEES IN AUSTRALIA (*Ghyra*).—The accounts from Australia give the most flourishing statements of the success of bee-culture there. An emigrant, five years ago, took out a stock of English bees, and he now has above 300 families; there may be some error in this, but, doubtless, the climate is most favourable, and I am told about a ton of honey has lately arrived from thence, and of fine quality. They work and swarm for nine months with little stopping. I should recommend their being placed in a shaded situation, and the use of hives of larger size than is common in England, holding, I should say, nearly a bushel, whether made of wood or of straw, and if the depriving system is adopted, to have the supers proportionably large.—J. H. P.

WINTER PLANTS (*O. P. Q.*).—If you give way to such an idea as that, the proposed conservatory can be filled with plants and climbers that will only flower from September to March; you will break your own

back, and your employer will turn you adrift for allowing him to spend his money on such a scheme. All the beautiful climbers you mention are not of the least use to you. There are no winter climbers at all for a conservatory, properly speaking, neither are there any trailers known that would flower in the dead of winter, at the back of the house, among ferns.

Ants (*Sarah*).—Lime-water is the only safe remedy to get rid of ants in your lawn. You must apply it several times, as it will not kill them, but make the place so disagreeable that they will remove to a safer one. Boiling-water, where it can be safely applied, is the only sure way of killing ants.

Geranium Leaf (*E. K.*).—The leaf of *Tom Thumb* was dreadfully sucked by the thrips, the very worst enemy to plant growing, and there is hardly getting rid of it at this season. Strong tobacco-water, and several applications with tobacco smoke, are the only sure remedies.

Names of Insects (*E. P's, Exeter*).—Two small moths, Nos. 1 and 2, reared from Chrysalides, in rolled-up leaves of Coe's Golden Drop Plum, are *Lozotænia lævigana*. No. 3, from young apple shoots, is *Lozotænia carpiniana*. No. 4, from the same, is *Lozotænia Gerningiana*. No. 5, found on leaves of the plum, is the caterpillar of some other species of *Tortricedæ*, which it is quite impossible to determine in this state; and No. 6, on the leaves of the Jargonelle pear, are the minute white-powdery winged insects, which Linnæus mistook for moths, calling them *Tinea proletella*, but which are now ascertained to belong to the order Homoptera, forming the genus *Aleyrodes*.—J. O. W.

Honey Dew.—*J. B. P.* says:—"The question of domestic bees availing themselves of honey-dew was more than once mooted in your columns. A circumstance has just come under my observation, which seems to throw some negative evidence on the subject. At the end of my garden is a large and very ancient pear-tree. A few evenings since, I was alarmed by hearing among its branches what I at first believed to be a swarm from my apiary, which is situate nearly under it. A closer examination, however, assured me that it proceeded from a large number of humble bees busily engaged in abstracting from the *upper* surface of the leaves that viscid sweet matter which is called honey-dew. On examining further through my garden, I observed the same occurrence in a less degree on wall-fruit trees, and among the wild bees there were several wasps, also employed similarly, but I did not anywhere observe a single domestic bee, although the meadows being nearly all mown, in my locality, has more or less deprived my bees of the extent of the pasturage they hitherto enjoyed. From this I was at first inclined to infer that the domestic bee does not gather honey-dew, as here was evidently a fine opportunity neglected by them, and the 'dew' seemed very heavy; but led by the circumstance to be more on the *qui vive*, I this day discovered a few domestic bees at the opposite end of my garden just as busy on the *under* side of the leaves of a small laurel hedge, and as I approached within a few inches of them, I clearly observed the tongues actively used, as the insects rapidly proceeded over the surface, in collecting some secretion. I am not positive, however, that it was honey-dew, for it was so small in quantity that I am unable to ascertain its similarity to that on the pear and plum-trees, which, on the contrary, was not only plentiful but unmistakeable."

Habrothamnus fascicularis (*J. R.*).—This, intended for a trellis in a greenhouse, should be stopped in order to get a great number of stubby side shoots, on which the bloom will be produced. We almost fear that your warm greenhouse will be too good a place for it. It would do rather better on a conservative wall. The *H. elegans* would more delight you, either on a trellis, or trained wildly up a column. Warm greenhouse;—treatment for various plants in summer; see an article to-day.

Begonia Fuchioides (*F. W. T.*).—This, which you wish to bloom late, we presume in winter and spring, you may go on with as you propose. Give it another shift next month, keep it in the temperature you propose, about 80° by day, and 60° by night; but towards September place it in an airy light part of a plant-stove, or in a warmish greenhouse for several weeks, which will harden the shoots before placing it in the regular stove-house, about the middle of October. Accordingly as it is grown and rested will depend the time it will bloom freely. We have had it good without resting at all; but we prefer stopping and hardening the growth for several weeks. By treating it as a warm greenhouse plant, we have had it fair in early summer; but it seems to do best when bloomed in winter and spring, and from young plants grown in summer.

Hybridising Begonias (*Ibid*).—We do not see why you should not be successful in crossing *Cinnabarina* and others with *parvifolia*, &c. If you could get the compact habit and free blooming of the last, with the colour of *cinnabarina*, you would achieve something in a pecuniary point of view. We would make *parvifolia* the seed-producing parent; but if you have room, you might also try *nitida*. Little has yet been done with this family, and yet the worst of them is beautiful.

Plants kept without Hothouse or Greenhouse (*M. Fermanagh*).—We are very much pleased, but must con your letter over again, and give it more attention. Meantime, build your pit as you propose, and the sooner the better. Put slate, or a layer of tar mortar over the foundation; and you may safely add a coating of tar to the bottom of the pit, to be covered with sand; the smell will be all gone before you want to use it.

Food for the Redbreast (*S. Tomlinson*).—In reply to the inquiry, "How am I to feed and treat the Robin?" I will first observe that, if caught wild, he will sooner become reconciled to captivity if put into a cage with other small birds, and being of that class partaking of almost anything or everything in the nature of food, he will be glad to avail himself of that presented to his notice in the food of those with whom he is associated. I have always found him ready to take bread and milk mixed together into a stiff paste, alone, or with crushed hempseed added, or crushed hempseed by itself, crumbs of bread, groats, or broken wheat, or what is commonly known as "off corn," insects various, but especially worms, and pieces of raw meat, suet, or cheese cut small. I have preferred selecting a young bird, termed by bird fanciers a "brancher," that is, a bird which has not yet moulted; he will sing sooner and louder than an older bird. If brought up from the nest, he should be fed on bread and milk and hempseed mixed into a stiff paste, a little raw meat cut small, and worms occasionally. But I usually put them into a cage or aviary with other birds, and let them take their chance. I shall write a paper at no distant time on the Robin, when I shall be more explicit.

William Rayner.

Bees.—*B. B.* says:—"The following shews the increase and decrease of 8 hives during the last two months; my other 4 I could not weigh.

No.	Net weight April 23	Net weight June 23	Increase	Decrease	When swarmed.
	lbs.	lbs.	lbs.	lbs.	
2	4½	12¼	7¾		
3	8	5¾		2¼	June 19; 5¼ lbs.
5	8¾	15¼	6½		
6	11¼	16¼	5		
10	3¼	10¼	7		
11	7½	11	3½		
12	9¾	10	¼		Full of drones.
13	5½	4¼		1¼	June 19; 4¼ lbs.

"All these stocks were made very full of bees in autumn, and appear now strong and active. No. 3 and No. 13 are killing the drones rapidly. Had the stocks all swarmed, the increase, if any, would not I think have exceeded 1 lb. per stock. I shall be pleased to know how the stocks have succeeded in other quarters." This, we are sorry to observe, corresponds with the reports we have received from all quarters.

Bees (*W. A. E.*).—The old queen which accompanied the first swarm from No. 1 was, in all probability, unable to fly, and so fell to the ground and was lost, which circumstance accounts for the bees returning. The swarm of the 13th hive was headed by a *young* queen. The disposition to swarm is very much increased by the continued wet weather; not *any* honey can be collected, consequently none can be deposited in the glasses. The same applies both to Nos. 2, 3, and 4. No fault at all attaches to *W. A. E.*, the weather is the sole cause.

Early Drone-killing (*C. E.*).—Yes; drone-killing has commenced in many hives in the third week of June, caused, in all probability, from the impossibility of the bees collecting any honey on account of the continued rains.

Strawberry Runners (*B. B.*).—If your strawberry plants are weak, or only moderately vigorous, cut off the runners as fast as they appear; but if the plants are very strong, do not cut them off until the berries begin to swell. The plants from runners should not be moved until well-rooted.

Bees (*B. B.*).—All the very unusual circumstances you mention are caused by this unusually wet weather in June; *no honey whatever can be collected*, therefore the drones are killed. A large number of drones proves that the hive has been in a very prosperous state. A second swarm *will* sometimes leave the hive in the face of a storm.—J. H. P.

Eggs for Hatching (*A. M.*).—These should not be older than a fortnight, but the more fresh the better. We keep ours covered over with bran.

Edgings.—*A. M.* says—"Will Mr. Robson excuse my introducing to his notice London Pride as an edging for walks. He has not noticed it in his paper. I have seen it used extensively, and use it myself in my small garden. It grows very fast, and requires cropping into the size required twice a year, which Mr. R. will, perhaps, consider an objection; but it forms into such a compact and firm edging,—is so easily repaired when injured or killed, and is so hardy, that I have often wheeled twenty loads of manure over one spot, and not killed it, I think it a very good and useful edging, especially for cottage gardens. It has the advantage of looking well all the year round, and is, I consider, very pretty when in flower. It will grow anywhere and in any soil."

Practice and Principles of Gardening (*R. Ward*).—Buy *The Cottage Gardeners' Dictionary*, 8s. 6d., and Johnson's *Principles of Gardening*, 5s.

King's Patent Hive.—*J. B. P.* wishes for more particulars as to the construction and advantages of this hive from some one who has used it.

Worms in Strawberries (*Salisbury*).—The "worms" are snake millipedes. See what we said about them in our last number, page 220.

Food for the Nightingale and Robin (*N. R. F.*).—If you buy our No. 86 you will find full particulars about managing the nightingale. For the redbreast, see what is said to-day to another correspondent.

Diseased Potato Leaf (*J. H. B., London*).—The leaf is certainly an evidence of the potato murrain having attacked the plant. Leave the crop undisturbed. If dry, hot weather continues in July and August, the disease will not be severe probably. If wet weather occurs, nothing you can do will be of any benefit.

Lovell Fowls.—The *Rev. J. G. H.* will be obliged by a description of this variety, stating colour, and general size, as compared with other varieties.

Advertising.—*A. D.* asks—"Why do not nurserymen advertise more in The Cottage Gardener? I think it would pay them to advertise anything that could be sent by post that Mr. Beaton recommends, as scores of readers of The Cottage Gardener, no doubt, as well as myself, feel almost irresistibly tempted to buy them. Ever since seeing the *Cuntua dependens* figured and described in The Cottage Gardener, my very fingers itched to possess it, as Mr. Beaton somewhere says. What was to be done? I could not procure a plant of it in this part of the country, and to get a plant of it from the south at the high price at which I had seen it advertised, together with the expense of carriage, rendered it above my means. However, a few weeks since I happened to see it advertised at a very low figure—one or two plants sent post-free for 6d., above the price to prepay the postage. I soon procured two small, healthy, well-rooted plants, which are now about a foot high."

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WEEKLY CALENDAR.

M D	W D	JULY 15—21, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
15	TH	St. Swithin.	29.730 — 29.727	70—41	W.	02	2 a. 4	9 a. 8	2 15	28	5 38	197
16	F	Evening Primrose flowers.	29.884 — 29.763	67—46	N.W.	—	4	8	3 3	29	5 43	198
17	S	Wild Goat's Rue flowers.	29.851 — 29.826	74—41	N.W.	—	5	7	sets.	●	5 49	199
18	SUN	6 SUNDAY AFTER TRINITY.	29.950 — 29.893	72—39	N.W.	—	6	6	9 a. 16	1	5 54	200
19	M	Eyebright flowers.	29.970 — 29.806	71—52	S.W.	30	8	5	9 46	2	5 58	201
20	TU	Dodder flowers.	29.775 — 29.708	72—50	S.W.	—	9	3	10 10	3	6 2	202
21	W	Sun's declin., 20° 25′ N.	29.979 — 29.960	72—42	W.	—	10	2	10 33	4	6 5	203

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 74° and 51.8° respectively. The greatest heat, 94°, occurred on the 17th in 1834; and the lowest cold, 41°, on the 19th in 1832. During the period 97 days were fine, and on 78 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

(*Continued from p. 207.*)

CALTHA. MARSH MARIGOLD.

GENERIC CHARACTER.—*Calyx* none. *Petals* five or more, below the seed-vessel, oval, nearly flat, spreading. *Nectary* none. *Stamens* numerous, rather swelling upwards, shorter than the corolla. *Anthers* terminal, erect, oblong, of two lobes, bursting at the outer edges. *Germens*, five to ten, erect, oblong, compressed. *Pistils* styleless. *Stigmas* blunt. *Capsules* (*follicles*), as many as the germens, cylindrical, pointed, two-edged, erect or spreading, bursting at the upper edge. *Seeds* numerous, from the margins of the capsule, oval, with a small rounded prominence at the extremity.

CALTHA PALUSTRIS: Common Marsh-Marigold; Meadow-bout; Gowans; Golds; Country Beauties; Souci de Marais.

Description.—It is a perennial. *Root* rather tuberous, with numerous simple fibres. *Stems* several, nearly upright, about one foot high, hollow, nearly round, grooved, smooth, leafy, branched, purple at the lower part. *Root-leaves* on long, rather three-sided stalks, heart-kidney-shaped, smooth, shining, notched or scolloped on the edge. *Stem-leaves* nearly stalkless, alternate, more triangular than kidney-shaped, sharply scolloped. *Stipules* brown, membranous, withering. *Branches* in pairs. *Flowers* several, one on each flower-stalk. *Flower-stalks* alternate, upright, grooved. *Petals* five to seven, rather concave, an inch long, roundish-oval, bright yellow, glossy underneath. *Anthers* oblong, flat, bending inward, yellow; inner row broadest; outer row twice as long and club shaped and flattened. *Seeds* beautiful, lower end olive-coloured, upper end reddish.

There is a dwarf wild variety; and a double variety is often seen in our gardens.

Places where found.—In marshy pastures, and margins of water.

Time of flowering.—March to May.

History.—Its name is probably derived from the Greek word *kalthos*, a beautiful thing. The flower-buds pickled very much resemble capers. The juice of the petals boiled with alum stains paper yellow, but the colour is not permanent. It is a vulgar notion that this and the butter-cup render the butter yellow produced from the cows which eat them. That yellowness arises from the extra richness of the pastures just when these flowers are in blossom, and so far are cows from eating the Marsh Marigold, that they reject it until compelled to eat it by extreme hunger, and then, Boerhaave states, it causes in them a fatal inflammation. In some country places they collect the flowers on May-day, strew them before their doors, and weave them into garlands. This flower is one of those usually included under the Scotch name of *Gowans*, the Dandelion and Butter-cup being the others. Goats and sheep eat it, but by horses and swine it is rejected. Dr. Withering, jun., observes: "That the atmosphere, especially of a confined apartment, may be contaminated by the gaseous exhalations of plants and flowers, during the night often fatally mephitic, is unquestionable; and it would appear that even medicinal properties may be thus evolved; for on a large quantity of the flowers of Meadow-bouts being put into the bed-room of a girl who had been subject to fits, the fits ceased. An infusion of the flowers were afterwards successfully used in various fits both of children and adults. Few plants will be found more ornamental on the margin of the pleasure ground lake, wherein the rich golden blossoms are often reflected with admirable effect." It is the first flower of spring in Lapland, where it blooms towards the end of May. It is rather acrid. (*Smith. Withering. Martyn. Parkinson.*)

RESUMING our notes relative to the Roman poultry, we find Columella entering next upon a description of the fowls which are most desirable.

"It is not advisable," he says, "to buy any but such as are very prolific. They should be of a plumage very red or tawny, with black wings. Let the whole be of the same colour, or of a near approach to it. But, if of any other colour, let white fowls be avoided, for they are tender and less robust; neither is it easy to find specimens of them that are prolific. Let the breeding hens be of a choice colour, of robust body, square framed, large and broad breasted, large headed, with small, erect, bright-red comb, white ears, and of those thus characterised let the largest be procured, and not with an equal number of claws.* Those hens are reckoned of the purest

* Our five-toed Dorkings were probably introduced by the Romans, and retain this still desired characteristic of their ancestors.

breed which are five-clawed, but so placed that no cross spurs arise from the legs; for she which has this male-like appendage, is rarely fruitful, and when she does sit breaks the eggs with her sharp claws.

"The cocks should be lustful; coloured like the hens; with the same number of claws, but taller; proud of carriage; combs erect and blood-red; eyes brown or black; beak short and hooked; ears very large and very white; wattles looking whiter from their shining, and hanging down like a hoary beard; the feathers of the neck or mane varying, but preferably from yellow to golden, and spreading down over the shoulders; the breast broad and muscular; the wings brawny, like arms; the tail lofty, and composed of a double row of arching feathers, alike on each side; the thighs ample, and usually thickly clothed with coarse feathers; legs sturdy, not long, but armed as it were with dangerous spears. Even when neither prepared for fighting, nor for the triumph of victory, their temper should be shown to be highly generous, haughty, active, watchful, and given to crow often, also not easily alarmed; for sometimes it will be needful for them to repel attacks and to protect their conjugal flock."

Such were Columella's models of what he considered a most superior hen and cock, and if two specimens now in our poultry-yard, drafted from Mr. Punchard's stock of dark, or partridge-feathered Cochin-China fowls, had stood before the Roman narrator, he could not have described these more closely, if the arched tail of the cock were excepted, and three claws were substituted for five. The management of fowls adopted by the Romans, and the construction of their poultry-houses, closely resembled those adopted by ourselves; but for the present we shall pass over these particulars, and proceed to trace the history of the domestic fowl in our own country.

When Julius Cæsar invaded Britain, about 55 years before the birth of our Saviour, it is curious that he found that, although their religion would not permit them to eat either the hare, the goose, or the hen, yet that they kept them all "as well for novelty as for variety" (*Cæsar's Comm.*, l. v., c. 10); a description which means, if it means anything, that they bred them for the mere pleasure of breeding them and varying the breed.

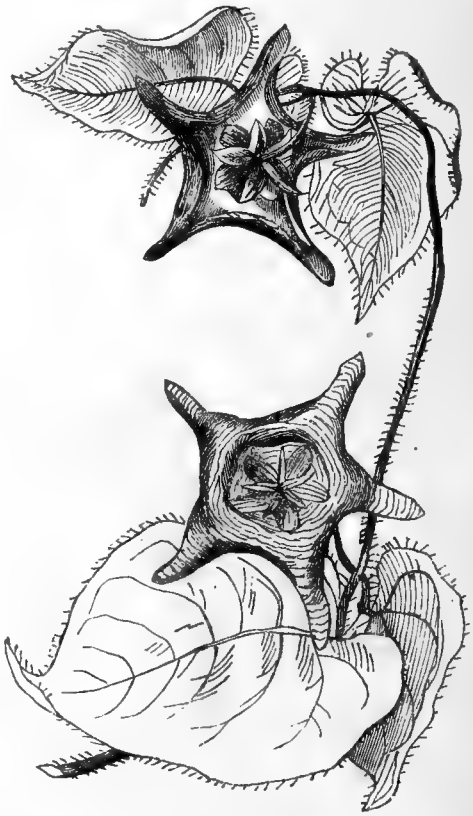
The Romans probably weakened the prejudice against eating the domestic fowl; and as it is well known that they strove to improve the British farming and gardening, so it is no more than reasonable to conclude that poultry shared in the progressive effort. As already observed, our most prevalent breed, the Dorking, share the five-toed excellence that characterised the most esteemed fowls of Rome.

When the Anglo-Saxons over-ran Britain in the course of the fifth and sixth centuries, they would still further sweep away the poultry-prejudice, for they not only bred them, but made them a prominent article of food. We have more than one testimony upon this point, but the most curious are found in the details of the rent reserved for land let in those days of money-scarcity. For example, we find one noble Saxon dame received annually out of her lands 40 ambra of malt, a full-grown ram, four wethers, 240 loaves of bread, one weight of bacon and cheese, four fothers of wood, and 20 hen fowls. In the laws of the Saxon King Ina, the amount to be rendered was fixed as follows:—Every ten hides of land shall furnish ten vessels of honey, 300 loaves of bread, 12 ambra of Welch ale, 30 ambra of clear ale, two full-grown rams, 10 wethers, 10 geese, 20 hens, 10 cheeses, a full ambra of butter, five salmon, 20 lbs. of fodder, and 100 eels.—(*Turner's Anglo Saxons*, iii. 602.)

The Normans, in conquering England, caused but little change in its farming, either in the tilling of the ground or in the management of live stock; we shall, therefore, pass over all the intervening period, and shall next resume the subject where we find poultry-keeping a subject dwelt upon in our national literature.

BELL-FLOWERED DICTYANTH.

(*Dictyanthus campanulatus.*)



This plant, extraordinary even among Asclepiads, to which it is referable, is a native of Brazil, where the authors of the *Flora Peruviana*, Ruiz and Pavon, mistook it for a Stapelia. It is Pavon's *Stapelia maculata*. This intricate order, however, has been since studied more closely, and its limits and divisions have been better defined. Decandole is the author of the name now given, which is derived from *dictyon*, a net, and *anthos*, a flower. It has also been called the Drumhead flower, *Tympananthe*.

What makes this plant the more remarkable in the eyes of the botanist is the excessive development of the

succulent matter in the flower, placing it on the same level with that of a *Stapelia*, while the leaves and stems exhibit no more than the usual development of cellular tissue. This plant flowered first on the continent last year, with Mr. Bauman, of Ghent; and the Horticultural Society of Anvers awarded their first prize medal for it. Professor Morron gave a figure of it in *La Belgique Horticole*, and traced its nativity to the Brazils, although formerly stated to be from the neighbourhood of Durango in Mexico. Mr. Bauman had it growing on a trellis about thirty inches high, out in the open garden all summer, and found the heat of an orange house was sufficient for it in the winter. The bottom of the stems turn hard and corky with age, when they lose the hairiness, which gives them and the whole plant a shaggy appearance. The flowers are produced singly on long stalks, and keep open about a week. They are very curious to look at. The bottom of the flower is like a green pitcher, with a whitish limb or border folded back, and prolonged into fine projecting corners or horns. It is from this portion that the plant is called the net-flower, the whole being crossed with numberless purplish lines or streaks. The organs of reproduction are in one mass in the centre, in the shape of a star. It belongs to 5-Pentandria 2-Digynia in the Linnæan artificial system. B. J.

Culture.—I would strongly advise an early search after this most curious plant. I am not quite sure if it is in London yet, but if not it will soon be; and very likely it will come from cuttings as freely as *Ceropegia* or *Hoya*, two of its own kindred, and if so we shall all have it by-and-by; and the way to turn it to the best account in the country will be to keep it in a good-sized pot well-drained, and the pot to be sunk in over the rim against a south wall, and train the shoots up as far as they will reach. Very likely, that after a while the roots and bottom parts of the stem will get so thick and juicy that the tops might be cut off when the frost comes, and the plant would then require no more care than we bestow on the fuchsia; or, what is far better, even with fuchsias, to turn out the balls out of the pots, and cover them in half dry soil, or sawdust, or sand, in a dark dry cool place away from the frost. About London they will grow it in pots for the shows, and some one will be trying to imitate the way Mr. Veitch brought out his beautiful Hexacentris, which charmed everybody. I am glad of this opportunity to explain the stamens and pistils of these curious Asclepiads to my young readers who follow me so earnestly in all my crossing and recrossing vagaries, and the more so as the father of all our crossing, Kœreuter, a famous German naturalist, was so much put out by the strange mixture of forms in these parts, that he and others verily believed that the pollen itself was the real stamens, and that Asclepiads must be fertilized like so many orchids. The middle part in the centre of the flower is called the little crown; on this crown is glued or consolidated the stigma or female organ, the style, the stamens, the anthers, and the pollen, all in one glued mass; the whole of the centre is a stigma in the shape of a broad disk, with five little horns or projections. These five projections are always taken by young gardeners to be the five stamens, and no wonder, but they are the part of the stigma to which the pollen must be put, and there is a gland on each of the projections to which the pollen will stick as if glued. The pollen is yellow, not in the usual dust, but in solid bodies. There is no trace of stamens at all, and the masses of pollen, like little bits of bees-wax, are placed in little hollows round and below the horns of the stigma. When the pollen is ripe, the hollows or anthers open, the lump of pollen comes out by its own weight, the wind or the flies shake the flower, causing the mass of pollen to swing about until it is caught by the gland on one of the horns, to which it sticks. D. Beaton.

GOSSIP.

Mr. James Barnes, writing to us from Bicton, near Sidmouth, in Devonshire, says—

"*The potato crop*, which has this year been planted to a large extent in our neighbourhood, is looking woefully bad. The disease is making serious havoc both in stem and tuber. As to the late-planted, I observe some fields where they came up and progressed only weakly a few inches, and there they are crippled, and completely stagnated with curl and disease, and never will be worth anything. Were they mine, I should have ploughed the ground ere this for Swedes or common turnips. *Apples* in this locality are a partial crop; the early-blooming varieties being cut off by the late spring frosts, and the latest-blooming varieties being swept off by the heavy rains and high winds. The intermediate blooming varieties are the fullest crop."

Knowing the source from whence the following information, relative to the *Crystal Palace*, was derived, we copy it from *The Times*.

"Various arrangements have been already made by the directors of the Crystal Palace Company, in conjunction with Sir Joseph Paxton, Messrs. Fox and Henderson, and Mr. Owen Jones, and the other gentlemen engaged in the reconstruction of the edifice, and in the formation of the grounds. The total length of the building will be 1,853 feet, the extreme width 384. The new palace will undergo several modifications. It will have three transepts—two of the same size and height as the original transept, and a central one of 130 feet span, 108 feet higher than the two smaller. The roofing of the transepts, as well as of the whole of the nave, will be arched, and the ribs will be of wrought iron, instead of wood, as employed in the old transept, the former material being used, not for the sake of durability only, but with the view also of absorbing the whole 'thrust' of the arches, and of preventing its being thrown on the adjacent flat roofs of the aisles. The glass for the new roofs will be all 21 ounces instead of 16 ounces per square foot The sloping form of the ground on which the building is to stand will be made available for the various works below the floor line, necessary for the heating of the interior, for machinery, and for the stores required in a building of a permanent character. This basement story will be formed of columns and girders, with brick arches fitted to receive the earth for the plants above. The disposition of the galleries will be much modified. It is determined that they shall not run along the nave, as at present, but shall be generally kept back to the outside walls coming forward only at those points where they will command the most striking views. The interior will be arranged on the following general principles. At one end the climate and vegetation will be those of the tropics, gradually changing, until at the centre transept, a temperate climate and temperate vegetation are reached, which will prevail throughout the remainder of the building. Portions of the palace will be converted into quadrangles similar to the fine art or mediæval courts of the exhibition. These courts will be made to represent the manners, costumes, &c., of different countries. For instance, one court will form an Indian bazaar, with adjoining durbars and reception rooms. Here all the illustrations of Indian life will be collected in as vivid and characteristic a manner as possible. Another quadrangle will be devoted to the illustration of China. A third will contain a reproduction of one of the courts of the Alhambra, by Mr. Jones; and a fourth will exhibit a Pompeian house fully restored. In one of the smaller transepts there will be Egyptian antiquities, casts from the celebrated reliefs, illustrative of the trades of Egypt, and from the most noted statues—all coloured exactly like the originals, and so disposed as not to be a mere dead collection of individual objects, but a living reproduction of Egyptian manners and things. In another part there will be presented a Nineveh palace. Steps have been already taken to procure collections of sculpture, of architecture, and of ornaments, illustrating the progress of those arts from their commencement to the present time. The sculptures will include the finest works of the great European galleries and of the modern schools. Many of the latter—the compositions,

for instance, of Rauch, Schwanthaler, Cornelius, and Schnorr —the English public know scarcely by name, and will be made acquainted with for the first time. The architectural collection will form a progressive series, with which will be mixed the industrial arts and manufactures of the middle ages. All these, by means of casts, &c., are within the reach of the directors, and the effect of the combination of statues and foliage will be as new as it is striking. A large space will be set apart for geological specimens, arranged in the order of the strata, accompanied by maps, views, and sections of the country, specimens of vegetation, &c. Modern machinery and manufactures will be largely represented in the exhibition of materials from their raw states, in every progressive condition up to manufactured articles. The intention of all the museums within the building will be educational. They will not constitute mere collections, interesting and instructive only to those who are beforehand acquainted with the illustrated subjects, but they will be arranged so as to exhibit the connection and progression of all the different parts. It will be impossible for the spectator to take interest in what he sees, without deriving instruction from his observation. Up the centre of the nave fountains of various descriptions will play. The principal, or Victoria Fountain, in the park, will play 150 feet high—that is to say, 20 higher than the Nelson column in Trafalgar-square. There is every reason to believe that within a twelvemonth the Crystal Palace will be once more open to the public."

We have heard, upon the best authority, of a gentleman near Bury St. Edmunds, who sold, within the last three weeks, *a Cochin-China cock and two hens* for thirty guineas.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Allendale, Sept. 11th. (*Secs.*, G. Dickinson and G. J. French.)
Bath, July 29th, Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)
Bridgewater, Sept. 22. (*Secs.*, Mr. J. Leaker and Mr. J. Hayward.)
Brigg, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
Bury St. Edmunds, July 30 (Picotees); Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
Caledonian (Inverleith Row), Edinburgh, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, Aug. 26.
Clapham, Sept. 11.
Colchester and East Essex, Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Derby, Aug. 4.
Durham, Sept. 8.
Forfarshire (Eastern), July 21 (Brechin); Sept. 15 (Arbroath).
Hampshire, Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hexham, Sept. 15, 16.
Hull, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), Sept. 9.
Lewes Grand National, July 14 and 15.
Lincoln, July 27, Sept. 14.
Liverpool, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), July 27, Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Maidstone. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), Sept. 10.
Newbury, Sept. 3.
North London, Sept. 14; Nov. 23, Chrysanthemum.
Northampton, July 27, Carnation; Sept. 27, Dahlia.
Oxfordshire (Royal), July 29; Sept. 23. (*Secs.*, C. Tawney and W. Undershell, Esqrs.)
Peebleshire, Sept. 14th. (*Sec.*, J. Stirling.)
Ponteland (Newcastle-upon-Tyne), Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)
South Devon Botanical and Horticultural, Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), July 15†, 21, Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, Aug. 6, Sept. 17.
Whitehaven, Sept. 17, Dahlias.

POULTRY SHOWS.

Agricultural Society (Royal), Lewes, July 12.
Birmingham and Midland Counties, 14th, 15th, 16th, and 17th December.
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).
Cornwall (Penzance), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)

† For seedlings only.

PINE-APPLE SHIFTING, AND GENERAL CULTURE.

At this period, the pine in every stage is in full vigour, the foliage is attaining its most complete development, and now it is that not a day may be lost, not a chance given away, but all the accessories to high culture must be called fully into action. It is impossible, and indeed impolitic, to attempt to lay down a rule as to the time of shifting, as it is termed; such must, in the main, be ruled by the character of the plants, and the period at which they are required to fruit. Pines, cultivated under proper conditions, may be allowed from eight to twelve months, dating from the period of the last shift to the time of the fruit-showing. Of course, kinds vary in habit, and, by consequence, the period will vary, and some allowance may be made for the character of the period at which the last shift is made. On the whole, however, it may be affirmed, that no period can excel that of Midsummer to the end of July; it being, as we think, a very necessary condition that the pot should be filled with roots before autumn. Such plants will go through the winter better; their tissue becomes firmer, and the plant is well prepared to withstand either high stimulus, or a degree of retardation, if necessary, in the ensuing spring. The term retardation may alarm some, but such *may be* practised in a considerable degree with the pine, although not the most desirable course. For instance, a cultivator may have a strong lot of plants in the end of January, which he is assured might be soon made to "show" by the application of a high stimulus, but it is not desirable to have the fruit ripe until August or September. In such a case, he has nothing to do but to give them a longer winter; instead of a bottom-heat of 80° to 85°, and a top warmth of 70° to 80°, he will continue his winter treatment with a very trifling advance,—say bottom-heat 70° to 75°, and top-heat 60° to 65°. This will carry him over the following two months, when the increased amount of light and length of day will demand a corresponding elevation of temperatures, as evil as an increase of the other elements necessary to success. He has, also, another power, which he may refrain from applying—moisture, especially at the root. Instead of resuming his watering in the early part of March, he may pass them on to the middle of April without any serious damage; and all this we term, retarding the fruiting period. Thus, out of the same stock of plants, circumstanced as before stated in the early part of spring, may one portion, if necessary, be started under a high stimulus, to ripen in May and June, and the other retarded, to ripen in

August and September. We have said thus much to show that people need not be very precise about a month or so in giving the final shift, providing the subsequent treatment is rightly shaped to a given end, and in order to suggest a very general shift about the time when this meets the eyes of our readers.

As potting, especially the final shift, is a most material point in the culture of the pine, we will, for the benefit of those who have not access to the earlier numbers of this work, give the detail, and we feel assured that old readers will out of courtesy acquiesce. To commence, we must advocate very roomy shifts; there is, in reality, no occasion for such frequent disturbances of the roots as were practised a few years since. But let it be observed, that the more roomy the shift, the greater caution must be observed in watering; this attended to, all is well. Much less water is required at the large shifts than the small ones, at least until the pot is nearly filled with roots.

Drainage is one of the chief essentials in pine potting, so much so that it is immaterial what other pains are taken if this be neglected. The crocks, or other imperishable material, should be so placed as to permit the free ingress of the fertilising gases arising from decomposing fermenting materials, as well as the escape of moisture after watering. To accomplish this, four or five large and crooked, or curved, crocks are well adapted, and these may be placed slightly overlapping each other, thus providing several apertures; the whole may then receive a slight casing of pounded crocks, the size of horse beans. This mode of crocking, or draining, will accomplish all that is required, and will permit the roots to escape occasionally into the plunging material. A little of the turfy loam, with the soil shaken out, is excellent to strew over the drainage, but care must be taken not to force the ball too high up. The size of the shift, therefore, forms a primary consideration, and this, in some degree, must be ruled by the depth of the ball of soil. Plants receiving the final shift are frequently in the pots known as 32s, seven inches diameter. Now the surface of the ball, when placed in the pot, must be from two to three inches below the rim, in order that a good casing of the new soil may cover it. Not less than two inches of drainage can be used in such full shifts, so that, if the ball be about six inches in depth, it is plain that the pot for the final shift must not be less than one foot in depth, indeed, many use them two or three inches deeper.

Thus stand matters as to size of pot; and now as to soil. Almost all British pine-growers agree in the use of a sound maiden loam as the chief material; as to the continental pine-growers, and their peaty soils, we are not aware that English gardeners have much to learn from them. It is possible that such soils suit their climate better, for varying conditions of moisture in the air may very possibly require a change in the staple of the soil. A good, sound, yet mellow and turfy loam, then, two parts, and the other part composed of rich, half-decomposed dung and vegetable soil, thoroughly incorporated, will be found to grow the pine quite equal in our climate to any other compost. A little sand and burnt material may be added, especially if any jealousy exist as to the stubbornness of the loam. As to the latter material, much, very much difference exists as to quality, and it is rather difficult to convey an idea by the pen; it is well for the uninformed to take the advice of a soundly practical man on such points. One thing we would urge, and that is, to endeavour to obtain a sample homogenous in colour and equal in texture.

In repotting the plants little or none of the original ball should be disturbed, and care taken not to injure the delicate fibres. One matter of consequence is to use *warm soil;* a temperature of 70° to 80° is necessary. We generally keep a hot brick or two overhead, in the compost, while the operation is proceeding. The compost should be chopped *fine* but not sifted, and should be rather dry when used; this condition enables the operator to press it close as the filling proceeds, a course which would be fatal to the texture of the soil under opposite conditions. It will be found good practice when the compost is filled nearly level with the top of the ball to introduce a layer of coarse turfy lumps, and that, pressed close, may have a casing of some two inches of the finer compost.

Something may be said as to the state of moisture of the ball previous to shifting; it should be moist, but by no means wet. It is a good plan so to arrange matters as that they may require watering about three or four days previous to the shifting; a fair condition of moisture will thus be secured, and no watering required for a fortnight or more afterwards, it being desirable, in large shifts especially, that the new soil should be mellow until invested liberally with the new fibres.

And, now, as to bottom-heat. Those who use fermenting materials must beware of sudden excesses, which frequently arise from newly-disturbed masses at this season. It has been stated before, that although 90° may occasionally prove harmless, possibly beneficial, yet 85° is by far a more safe proceeding. Persons whose plants have been tardy in rooting, or are supposed to require a stimulus, are apt to try to gain time by these extreme heats. My friend Hamilton thinks that those extreme heats are promoters of unwieldy crowns, and we doubt not he is right. It is a tolerable fair inference, that if by any sudden impulse an unusual amount of sap is thrown into the fruit, an amount which it cannot appropriate, such would be employed in the enlargement of the crown. We would, therefore, urge on the amateur much caution: if his bottom-heats, from now until the middle of September, range between 78° and 85°, he may feel assured of being in a safe track.

All fermenting materials, whether with fruiters or succession, should be stirred with a stake deeply once a month at least. This will cause them to give out their genial gases with freedom, and tend to prevent the breeding of those nasty fungi which contaminate the air of the pit and give a disgusting appearance to things. Water should also be freely applied wherever any huskiness appears, especially previous to stirring.

Fruiters "rising" or swelling must, at this period, receive every assistance, such as liquid-manure, top-dressing, &c.; and during all such operations the most anxious care must be had not to break or derange the functions of the leaves. Every injury of this kind is a positive loss to the fruit, especially after it has blossomed. Those who top dress are but too apt to strip lower leaves—out-of-the-way, as they term it,—but the less of this the better. Certainly, if leaves are really decaying it is another affair.

Ventilation, in its utmost latitude, must now be indulged in. There are those who believe that a close atmosphere is absolutely necessary to the free swelling of the pine, but we believe it to be mere fudge. That a certain quantum of atmospheric moisture is indispensable we know, and that it is somewhat difficult to preserve that amount with a free ventilation we can also understand; but we cannot allow the question to be thus mixed up to the prejudice of ventilation. We believe that nine men out of ten draw false conclusions this way, through confused and vague ideas jumbled together.

It is extremely probable that in all forcing matters too much fresh air could not be given, providing the requisite amount of air, moisture and heat could be otherwise secured. Indeed, thus nature teaches us, and we generally smart for it in neglecting her teaching. However, it must be confessed that under certain cir-

cumstances it would be both a waste of fruit and an inconvenient amount of artificial heat if extremes were constantly resorted to; all we can say is, be sure to continue at all times an ample supply of air moisture from one source or other; too much can scarcely be supplied to the pine.

Light is the great ruling agent; the heat apportioned to it, and the moisture to the heat. These are the fundamental principles of hothouse management, and the exceptions are few indeed.

Let every one avail himself of solar heat if attainable; the neglect of this involves bad economy, and forces the cultivator to employ a medium by no means so general.

R. Errington.

HORTICULTURAL EXHIBITION, REGENT'S PARK.—JUNE 30th.

This, the third and last exhibition of the season, in the garden of the Royal Botanical Society, at the Regent's Park, was quite as full of plants, and as gay in flowers as any of this season; the blaze made by the Azaleas in May, was sustained to day by Cape Heaths. The fancy Geraniums, and the great Pelargoniums, were fully as good, if not better, than they were at either of the other two previous exhibitions. The large collections of stove and greenhouse plants were very rich in well-grown specimens, and Mrs. Lawrence came in only as second best in this class. Mr. Cole carried off the premier prize of the day triumphantly this time; it was not a race of heads or necks, but of full lengths, and something more. The worst plant in England to grow well, *Roella ciliata*, was the largest and best grown plant of the kind ever exhibited, and the best specimen of good gardening at this exhibition; it was in Mr. Cole's large collection. We must not confound this, old as it is, with the genus *Ruellia*, which sounds so much like it. *Roella* is a genus of *Bellworts*, and *Ruellia* one of the *Acanthads*. To know or describe a new species of *Ruellia* is one of the most difficult things a botanist takes in hand, because the species are so numerous, and come so near to each other. But there is no difficulty in the genus for gardeners, as no *Ruellia* is at all difficult to grow or propagate; while a tyro in botany could make out a *Roella* almost at first sight. It is questionable if there are ten gardeners in England who could grow *Roella ciliata* in the way that Mr. Cole brought out this splendid specimen of it, nearly a yard across, and trained as they do the great pelargoniums. I recollect, some years ago, the Messrs. Frazer, of Lea Bridge Nursery, having exhibited a specimen of it at Chiswick, in as good bloom as we had it here, but the specimen was not near so large. *Schubertia graveolens*, a fine stove climber, belonging to the Asclepiads, was spelled *Shubertia*. M. Mirbel of Paris called the deciduous cypress, *Schubertia*; it is so called in some English books; and Blume called *Horsfieldia* an *umbellifer-Schubertia*. All this mixture and bad spelling is apt to lead one astray when *Schubertia* is spoken of. Be it known, therefore, that the *Asclepiad Schubertia* is the true one; that it is a most profuse and lasting bloomer, a stove climber, and that one might be excused for mistaking it for *Stephanotis floribunda*, looking only at the flowers with a cursory glance. As an instance of sleek pedantry, we had here the old Madagascar periwinckle, *Vinca rosea* and *alba*, two or three times called *Catharanthus*—what next? Who is to write "Cottage Gardeners' Dictionaries" every year, to keep pace with all this routing out of synonymes; and why not call the red *Vinca*, *Catharanthus*, and the white one, *Lochnera*, or *Pervinca*, for the one is as lawful as the other, as you may see in any good arrangement of genera under *Vinca*; but I saw something much more to the purpose, under one Vinca, at this show—it was a compact and comparatively a small plant, with the largest and best coloured flowers I ever saw of the sort. The plant must have been seven or eight years old, judging from the size of the stem and colour; it must have been cut in every year as hard as ever a geranium was pruned; at last the plant got so old, that it gave up the long growth peculiar to young plants of it. The shoots bloomed near home, as we say, or near the main stem, and the great strength of the roots was thrown into the bloom, instead of being expanded in two-feet shoots, as you often see young plants do; here is an excellent hint for young beginners, as all we of the old school thought that a three-year-old Vinca was at its prime. *Pentas carnea* is another fine plant which requires exactly the same treatment as these Vincas, and a much better plant; but no one brings it to an exhibition now. I saw a plant of it in Mr. Jackson's nursery, next door to me, which was as good as any plant at this exhibition. Perhaps *Pentas* may be more apt to go off in the winter—but *Vincas* are ticklish in a damp house. A tall vinery, where grapes are kept till February, is the best place to winter such plants, and also the soft *Clerodendrons*, and, indeed, many such; an intermediate house for orchids, where the plants are kept quite dry in winter, is the next best place for them, and they should not be pruned until the very week you want to begin their growth, and after pruning they should not be shook out of the old soil, nor get much water until they have made a slight growth. Try them on this plan, and let us see how old they must be before they show such marked improvement in the dwarfer growth and larger blossoms, as this Vinca has shown us may be the case. Ladies go to the shows to see fine flowers, and what-not; but young gardeners ought rather to go to learn more about their business, and to generalize on, what others might think, very simple things. The fancy geraniums, and the ladies who admire them so much, had full and free justice done them on this occasion; they were separated from the great pelargoniums for the first time in my experience, and a collection of other and very different kinds of plants put between them, and the best of it was, that this intermediate collection was of such plants as must attract general attention. So that you went to either class of geraniums with that freshness of mind, if I may so speak, which never fails to give us the full enjoyment of scenes in landscape, as well as of the different groups of plants at exhibitions.

These fancy geraniums are always about their prime at the last shows here and at Chiswick, and those families who leave London before the July shows lose the best treat of the season. The best fancy here, in the way of *Anais*, is *Madame Rosati*, or *Rosatii*: there were three splendid specimens of it. *Triumphans*, as at the other shows, is the most scarlet of them; but one called *Beauty Supreme* is nearly as high in colour, with a much better habit and more profusion in bloom, therefore I put it first and *Triumphans* second in the high-coloured ones. The nearest approach to white in this class is Henderson's *Delicatum*. I have a whiter one of my own seedlings, called *The Countess*, but not so good a bloomer. I know ladies have a dislike to white flowers unless they are pure white. I wanted to call my seedling Lady Middleton, as it was the finest I ever had, but her ladyship would not accept the compliment; the flower or colour was "too faint," but until we get a clear white flower, let us grow *Delicatum* extensively, to make a variety. The very dark and ugly brown ones are fast disappearing, and a new race of fancies is taking their places, and the improvement is beyond comparison already. I place this race as follows:—1. *Hero of Surrey*; 2, *Rolland Cashel*; 3, *Annie*, fine; 4, *Cabrera*; 5, *Richard Cobden*; 6, *Punch*; 7, *Pilot*; and 8, *Flora Mc Iver*; and of seedlings, *Madame Sontag* and *Ne plus ultra* belong to this section. The figures here are not

according to the merits of the flowers, but to show the way I would arrange them for effect, or make a bed of each in the flower-garden to show them off *in gradation*, not in *contrast*. *Annie*, a seedling, by E. B. Henderson, is my own favourite of this group, and if they put *Ocillatum* among them another year, I would place it between 3 and 4. I said in June that it ought to stand between the *Hero of Surrey* and *Gaiety*, but this is the best and true position for it. *Queen of the Fancies* and *Ne plus ultra* are in the transition state between the above and the dark ones, such as *Defiance*, *Magnifica*, *Ytolinskii*, *Statuiskii*, &c. &c.

Large Pelargoniums.—I did not attend much to the seedlings in this class all the season for two reasons; first, because Mr. Appleby was there, and he could see all about them if he was to shut one eye and close the other; and, secondly, that what they call first-rate ones are as treacherous as "new and rare plants," for which large prizes are often given before anybody knows what they are good for. If ever I am to have two or three leisure days to call my own, I shall draw up a list of all the "new and rare plants" that have got first prizes for the last ten years; ditto of all the first and second prize geraniums, and state how many of these appeared in collections this season, and then see how far the accumulation of ten years, and the barrow-load of medals, have influenced the decision of the judges both here and at Chiswick. Now, I rail without blushing at giving away money for things which nobody knows anything of, and for what the florists call the very best of their kind; but if the lists I contemplate refute me (I am very sure they will not), why I shall willingly acknowledge myself at fault, and pay more attention to the subject in future. Can any one tell me if Arnold's *Virgin Queen* geranium had a first prize anywhere when it first came out, or has it originated at or very near Cheltenham? The reason I ask the question is, that we had eight plants of it in so many collections at this exhibition, so that that stamps it as a favourite; and I missed the *Gipsy Bride*, the best seedling that all the gold in England could get out about five or six years ago; but it might have been there without my noticing it, as there are a score much like it,—dark back and reddish front. There was one seedling there, and I shall stake my gold pen that it will be a favourite plant in collections twenty years hence, and if the pen lasts till they give over growing this geranium, it will be brought out on high occasions as an heir-loom, of which it will, no doubt, be boasted, that "one of our family" used it in writing for The Cottage Gardener two hundred years ago. The name of this seedling is *Virgineum*, and a better name was never hit on; it is all but pure white, large flowers, large trusses, fine leaves, and a stocky growth, in fact, all that you could desire in a virgin white geranium. There is a dash of waviness about the petals which would lead you to suppose that a little of the pollen of the fancy sorts got mixed with that of the pelargoniums to produce the result, but that would lead us to the misty regions of superfetation, and we had better drop the subject. Out of the large specimen pelargoniums, I marked the following as very distinct:—*Exactum*, white front, and dark purple back petals; *Virgin Queen*—eight plants of—rather common-looking, but very showy; the front petals white, and a white band round a large brown blotch on the back petals; *Ajax* I never saw better; it would make a capital match plant for *Optimum*, where you want to place some in pairs, as often happens in conservatories, halls, and other rooms. *Ajax* is a fiery red in front, with a dark back; *Optimum* the same, but a different tint in the red, and the back petals are like the back of a raven. *Peerless* is to be added to the scarlet or high-coloured section, and it is as good as most of them, with very little black in it; *Alonso*, red and dark; *Cloth of Gold* is quite a marked flower, orange-scarlet, much streaked in the front petals, the back ones black, with a rich edge of the ground colour; and *Shylock* is another very distinct one, the front dark purple, streaked and blotched lilac or French-white eye, and black and all black in the back petals; and, lastly, *National*, red and black, and a very bold flower. What a contrast between these and the Adam and Eve of the race, which stood modestly enough at one corner, *Flexuosum*, *Fulgidium*, and *Reniforme*, of which there was a seedling variation, with lighter blossoms, and it was called *Erectum*, a name next door to nonsense; if we had *Sæpeflorens* and the old *Grandiflora*, the ancient patriarchs would have been complete, or nearly so.

Chinese Azaleas.—Of them there were still a few exhibited, of which *Præstance* was the best. Strange it is, that *cactuses* are not brought out more plentifully—only one or two collections the whole season. There was a very fine lot of *Lilium longiflorum*, in two varieties, one with very sweet flowers, the other not so much so, and on this slight pretext the sounding book name *Eximeum* was given to the sweetest on the continent, from whence Maquoy, of Leige, first sent it to this country. By the side of these lilies stood two excellent varieties of *Phlox Drummondii*, one a rich deep purple, called *Thomsonii*, the other a fine striped one, called *variegata*. Then a lot of *tailings*, new things, and specimen plants, not worth much; but I shall say that two of the specimens were orchids, and would have been called good eighteen years ago, *Oncidium pulvinatum*, and *Cyrtochylum flavescens*. There were three single specimens of Heaths, two of them were *Cavendishii*, the easiest to manage, and perhaps the finest of all the family; one of them had a prize; but this heath, fine as it is, will grow very well in future without a prize at all; the other prize was given to *Massonii*, the finest grown plant of it, and the largest I ever saw, yet it is one of the most difficult of them to grow well. I recollect the time when no gardener in the kingdom could grow it fit to be seen, except Mr. M'Hale, of the Edinburgh Botanic Garden; and yet, if my plan of managing this department of the exhibitions were in force, these heaths would have no prize at all, and another "specimen" of which no notice was taken, would have come in for a pound or five-and-twenty shilling prize, because it was a very old and neglected plant, so much so, that if the label had been off, there was not a gardener out of fifty there who could tell the name of it. I had it in flower for two months, in 1838, and out of at least one hundred good plantsmen who called two only could tell the name—Mr. Low, of Clapton, and Mr. Gruneberg, of Frankfort. Three of the first botanists in Europe saw it, but could not say what it was "just at the moment." It is easy to grow, and is nearly as hardy as a myrtle, and does not require training, as it grows better without. It has the look of some *Diosma*, and the flowers of a daisy, but bright yellow, and as large as a shilling. I believe it was never exhibited in London for competition, and though only a second or third-rate plant, it well exemplifies what I mean for breaking through the sameness of the *grandifloras* and *floribunduses* which we see year after year, and at every show. The name of this test plant is *Relhania squarrosa*, and let us all hope to see a new class in the next schedules—say six stove or greenhouse plants that were not exhibited since 1840, or some such date; they must be all good in their way, and we shall suppose—to make my meaning more clear—that they have either been altogether overlooked, like this *Relhania*, or have been very difficult to grow to good shapes, as *Euphorbia jacquiniflora*.

D. Beaton.

MILDEW, INSECTS, AND SULPHUR.

Being in company with an intelligent farmer the other evening, the partial and total destruction of the winter bean crop naturally formed the topic of conversation. I had imagined that the sowing of these beans so early had been a modern method with a peculiar kind of bean; but I was informed that a similar method was adopted many years ago; that the success, at first, was great: but that afterwards, in some seasons, they so failed that their culture became unpopular. Some of our sires, in practice and experience, might, therefore, have it in their power to furnish data that would be of national importance. I also found that—very contrary to the hap-hazard manner in which it pleases some writers to describe farmers as conducting their operations—the gentlemen referred to could calculate at once what a field of beans cost him, and the loss he sustained by their destruction. But as to a remedy for the evil we found ourselves sunk in the dumps, or traversing without a sure chart the regions of Cloudland. Quicklime was mentioned as an enemy of the whole fungal alliance, as those who water mushroom beds with even clear lime water may find to their cost; and sulphur is also very efficacious in eradicating the smaller kinds of mildew; but, either separately or mixed, there is no antecedent for applying them successfully against mildew in the fields; and the farmer might have added, it will be time enough for us to try such specifics when you gardeners can banish such blood-suckers from your late peas in the garden. As to what were *some* of the causes of the evil we were pretty well agreed—such as the dryness of the air in April and May, and the coldness of the soil even when there was a bright sun, the heat from it being counteracted by radiation, and frost at night, and this followed by the cold rains of June, without sun heat to give energy to the vital forces, or cause the evaporation of the stagnant juices. Granted that this is the case, and it will at once be self-evident that the higher the state of cultivation the greater in such circumstances will be the danger. But even grant all this, and we must go a step farther, and find that there was something peculiar in the state of these beans to invite the disease at that time, or why should spring-sown beans, and other crops, placed in similar circumstances, have comparatively escaped? Questions these, which, as in the potato disease, bring us down from our *stilted* wisdom, and show us how little we really know.

But why introduce the loss of the bean crop here? For several reasons. First. Puzzling as many such questions as the above are, without knowing much in a scientific point of view of *mildews*, I have paid so much attention to the circumstances in which they were developed as to convince me that if the following circumstances were not the cause, they were either the antecedents or the coincidents of the malady. For instance; excessive cold and moisture at the roots, while the branches were in a hot, dry atmosphere; a great degree of warmth and moisture at the roots, while the atmosphere around the branches and leaves was close and muggy; or, if there was sunlight, the atmosphere being suddenly cooled, encouragement given by warmth, and moisture, and shade, to the extending principle, and not enough of light and air to consolidate that growth; a very dry state of the roots, and the plant extending itself by absorbing from a foggy atmosphere. These are some of the circumstances which we have found associated with mildew, whether manifested in a pea, a peach, or a heath, and, I may say, in a vine, though in that department I have as yet had no practical experience of its virulence. The failure of the bean crop becomes, therefore, a lesson and an example to each of our readers who has a plant-house, or who grows a few grapes, or any other fruiting plant therein. From such classes (a few grapes being as much thought of in autumn as flowers in spring), complaints have reached me in shoals, and too frequently when matters had gone too far for a remedy to be effected for that season, while, in the case of plants, nothing but consigning to the rubbish-heap could be thought about.

In the open air, preventive measures hitherto have been to a great extent beyond our control; not so in our plant and fruiting houses. These we can always regulate according to circumstances; and prevention being ever better than cure, I have found that proportioning the temperature to sunlight, allowing the heat to decline in dull, foggy weather, and using sulphur pretty freely, as a paint on walls, and hot-water pipes, have operated as a security alike against insects (especially the red spider) and the dreaded mildew. A number of amateurs who grumbled sadly since they adopted these precautions, and left, when possible, a little air in their houses at night, have had reason to be satisfied. In every mode in which I have seen sulphur applied against mildew, it is equally efficacious against insects, except when the sulphur is applied either dry or as a paint, with water, to the parts affected; in this mode it tells against the mildew, but I never found it beneficial in the case of the red spider, as these little fellows will ride over and among the little dots of sulphur, and seemingly enjoy the matter as a joke, while heat so applied as to volatalize these dots into vapour will soon send them a flitting, but if the colonies are well established several repetitions will be necessary.

My chief object, however, in adverting to this matter now, is to draw *particular* attention to an interesting editorial article in the *Gardeners' Chronicle* of the 3rd of July, in which allusion has been made to what has been done in this country, but more particularly by our neighbours in France, to arrest the mildew in the vine, &c. I do not think the editor would blame us much if we transcribed the article, as it contains matter important to every man who grows a plant. I will merely glance at a few points:—Allusion is made to the powdering and syringing of the affected parts. Mention is made of Baron Rothschild's gardener in Paris, M. Bergman, moistening his hot-water pipes and then sprinkling them with sulphur, and finding these effectual. I have been in the habit of doing this for more than a dozen years, and I found it not only a capital remedy against the spider, but noted that peaches that used to be mildewed never showed a vestige of it afterwards. Notice is taken of Mr. Tucker, in 1845, using hydro-sulphate of lime in a clear state, dashed against the parts with a syringe or brush, the composition consisting of one part sulphur, one part lime, and one hundred parts of water. Ten years, I should think, before that period, something like a similar mode was recommended in the *Gardeners' Magazine*, for keeping the red spider at bay. I cannot fasten on the subject at present, but it strikes me the writer there used rather more water. The other week, such a mode of application was recommended in these pages. For *doing* the red spider, I have found such a liquid superior to using water with the sulphur mixed up in it. Some years ago I got mildew on some winter cucumbers; those dressed with such a liquid recovered; those smeared with sulphur got unsightly, and so shrivelled that the leaves might as well have been removed at once. Flowering plants, such as heaths, growing among soft-wooded plants, infested with mildew, were also bettered by being plunged in the liquid, or syringed with it; at all events, they were less unsightly than when smeared or dusted with sulphur. Right or wrong, I used to avoid allowing the liquid to get into the soil. The using of this hydro-sulphate of lime is the *great point* in the article in the *Chronicle*. But then the mode of preparing it is wholly new, and deserves the consideration of every one who

has a garden, whether looked upon either as a preventive or cure. M. Grisson, head gardener of the forcing houses at Versailles, is its author: already it has been recommended to bestow upon him a public reward. This is as it ought to be, immeasurably better than making a benefactor pay for the monopoly of a patent, which after all may be of no service to him. M. Grisson mixes together a pound of flowers of sulphur, and an equal quantity of fresh slaked lime. When well mixed, these are put into an iron or glazed earthenware pot containing five pints of water; the mixture is made to boil for ten minutes, and kept stirred all the time. The pot is then taken off the fire, and the mixture allowed to settle; when it has done so, about four pints of the clear liquid is bottled for use. Before using it, to each part of the liquid is added 100 parts of water; so that one pint of the liquid may be made to cover sixty-eight square yards, or fifty-one feet along a wall twelve feet high. M. Grisson uses such a wash before the vines are in flower, again when the berries are set and growing, and a third time afterwards should there be any sign of the malady. The sulphur costs only 1½d. per pound in France; as yet we pay much more in this country for it, but the writer of the article truly says, that with sulphur at the Paris price, and provided the composition is as effectual as it is represented to be, there is nothing in the way of expense to prevent its being extensively used in our gardens, and even in our fields. I have already shown that next to the fumes of sulphur from hot water pipes, or the sun beating fiercely against it on a wall, such a hydro-sulphuret of lime as is formed by mixing lime, sulphur and cold water, is very valuable. I can easily imagine that the boiling process will cause more of the sulphur to be absorbed; at any rate the new mode is worthy of a trial, either as respects insects or mildew, and if found effectual, it will not be long before the price of sulphur here will be near the Paris price. Were that the case, what I use now would be trifling in comparison of what I would do then.

R. FISH.

ERRATUM. Page 214, 2 col., 6 line from bottom, instead of "six to sixteen," read "sixteen to sixty."

FLORISTS' FLOWERS AT THE REGENT'S PARK EXHIBITION.—JUNE 30.

A MORE glorious day for an exhibition of florists' flowers and plants cannot be conceived; it more than compensated for the thorough soaking one on the 9th. More than seventeen thousand persons congregated together to view the beauties of Flora and Pomona displayed in the tents, with no niggard hands, for their gratification and instruction. It was, indeed, a gratifying spectacle to see such fine objects of horticultural skill, and such a numerous company of well and elegantly-dressed ladies and gentlemen drawn together. The tents were crowded during the whole afternoon, notwithstanding the heat therein was oppressive. We think it would have been a great relief if the sides of the tents had been thrown open; but we suppose the breeze would have been too strong for the plants.

Florists' Flowers, especially *Pelargoniums*, were exhibited in force. Indeed, the usual place or tent for this class of flowers was not large enough to contain them, and it is a pleasing fact to record that there was not an indifferent plant of pelargonium there. The judges must have had a difficult task to decide which were the best. There were but few additions of really good varieties to note, and we consider it is our duty only to record such as a guide to the readers of the COTTAGE GARDENER what to procure for next year. In show varieties, *Ambassador* proves to be a fine variety worth growing, as also the following—*Optimum*, *Enchantress* (Foster's), *Mars*, *Ariadne*, *Little Nell*, *Exactum*, *Star*, *Boule de Feu*, *Painter improved*, and *Camilla*. The last was a perfect beauty. All these are worthy the attention of the grower of these fine plants. In seedlings of this class, *Zaria*, raised by Mr. Hoyle, obtained the highest prize—a first class certificate. It will be remembered that we predicted, in our report of the last show at the Park, that this fine seedling would take a high rank, and of course we are gratified that our judgment has been confirmed on this occasion. For the description we refer our readers to that report. Every grower of Pelargoniums ought to procure it as soon as possible. It is the most distinct variety that has been raised for many years. Mr. Turner, of Slough, also had a prize of the same value for one named "*Novelty*," a good deal in the way of "*Painter improved*," but of a better form; upper petal dark maroon, edged with rich crimson; lower petals rose, with a dark blotch in the centre of each, and veins of the same colour branching from it, giving it a rich, pleasing appearance; form and substance first-rate; not so novel as *Zaria*, but a fine variety. Mr. Gaines exhibited one named *Nepaulese Prince*, a variety much like *Novelty*, but the upper petals overlap too much.

Fancy Varieties.—The collections of these were well grown, and finely bloomed—in fact, superior to any seen before, but they mostly comprised the varieties we have already noticed. There were a great number of seedlings exhibited, but none of sufficient distinctiveness to warrant the judges in giving any a prize. *Madame Sontag*, however, is a well-formed, and distinctly-coloured variety; there are several old varieties that are inferior to it, but its trusses do not arrange themselves satisfactorily. The cut Roses were, as usual, very attractive, though rather deficient in numbers. Unfortunately we did not get into the tent where they were until the company arrived, and then it was impossible to take observations upon the kinds; but we shall do so shortly, as a friend was, previous to the rush, taking notes for us, and we shall give the result.

The exhibition of roses, planted out in beds, near the American gardens, were in excellent health. They are arranged in beds, with winding spacious walks around them, and surrounded with a wide border of tall standards behind, gradually lessening down to the edge of the walk. The weather of late having been so unfavourable, there was not a very great display of bloom, though sufficiently so to relieve the uniformity of the green leaves. In ten days or a fortnight they will be in fine flower, and will then be the finest show of roses near London. They are contributed by Messrs. Lane, of Berkhampstead, Messrs. Paul, of Cheshunt, and Mr. Rivers, of Sawbridgworth. Not being intended to be permanent, they are thickly planted, which allows for a great number of varieties in a comparatively small space. The late rains, though they have prevented their blooming so early as might have been expected, yet have been beneficial to them by inducing vigorous growth and robust health; they will be well worthy of a visit in a few days. There are thousands of strong healthy buds, and they are remarkably free from insects.

Roses in Pots.—There was only one collection exhibited, from Messrs. Paul and Sons, and there was nothing new amongst them.

Pansies.—Several stands were exhibited in very fair condition. Mr. Bragg, of Slough, sent a fine dark seedling, which obtained a certificate, and Mr. Thomson, an old veteran in pansey culture, sent his beautiful seedling, the *Pride of Iver*; both have first-rate properties. We could not note anything new in the collections; they certainly are not so interesting shown in boxes of cut flowers as they are, or, rather, were, in pots at Chiswick.

Pinks.—The stands of this favourite flower were numerous, and in fair condition. Mr. Turner showed several seedlings, the best of which was named *Sarah*,

but they were all deficient in one property or another; perhaps the late wet weather has had something to do with the matter. In the collection we added a few to our former notes. *Sarah* was shown in better condition in the collection than amongst the seedlings. It is a large flower, with a heavy red lacing, well up in the centre, but rather too much fringed at the edges. *Lola Montes, Oxford, Rival, Optima*, a seedling of last year, *Harriet, Criterion, Double X, Dr. Hawkins, Huntsman, Koh-i-Noor, Hon. Mrs. Herbert, Sappho, Narborough Buck*, and *Morning Star*. Cultivators of pinks who do not possess the above varieties would do well to procure them.

Verbenas.—We were much surprized that there were no plants in bloom exhibited of these lovely flowers. Is it because no prizes are offered for them? Mr. Smith, of Hornsey, who has raised more good varieties than any other grower, sent a fine stand of cut blooms. The best were *Shylock, Alba magna, Ormsby Beauty, Purple Rival, Exquisite, Ariel*, and *Othello*. Amongst the seedlings we noted one named *La Camargo*, that will be useful as a bedding variety; flowers medium size, of a deep purple colour, relieved by a white eye; truss large; habit dwarf and compact; a desirable variety. T. Appleby.

CONIFERÆ.

(*Continued from page* 217.)

Arrangement (continued).—Though it was mentioned in our last paper on *Coniferæ*, that to see these fine trees to advantage it is desirable to congregate them together on one spot of ground, called a *Pinetum*, there to display their several characters of beauty of form, stateliness of figure, or magnitude of growth, yet it by no means follows that they may not be arranged in different ways, and various situations, in the other parts of the domain. The effect of avenues of *Araucaria imbricata, Cedrus Deodara*, and the *Irish Yew* may be seen at Elvaston Castle, Chatsworth, Bayfordbury, and various other places. Whoever intends to plant *Coniferæ* merely as ornamental objects would do wisely to visit these places, especially the two first. We shall never forget seeing the gardens at Elvaston two years ago. We were one of the favoured few whom the late noble earl permitted to see the place; such was the sensations of pleasure the sight gave us, that we actually threw our body down upon the soft lawn in an ecstacy of delight. And this beautiful scene, be it remembered, is created upon a tame, level piece of land, some eighteen acres in extent, but so judiciously planned that the spectator at almost every step sees fresh scenes of beauty, and is delighted beyond measure at every turn. It is to be hoped that Sir Joseph Paxton will introduce these elegant, charming, evergreen trees most profusely in the park or pleasure-ground at Sydenham. It is a matter of rejoicing that Sydenham is far enough removed from the smoke of London to allow Coniferæ to flourish as well there as at Elvaston, or even Chatsworth itself. This alone will help to console the Londoners for the removal of the Crystal Palace, and will be a great attraction to the lovers of fine, rare trees growing in the open air in all the luxuriance of their native woods.

To return to our subject of arrangement. Wherever there is an opportunity, plant avenues; only bear in mind our former hints about planting, and protecting them from game. Hares and rabbits are very fond of the young tops of most kinds of Coniferæ, and we need not say that if the leading shoot is nipped off the beauty of the plant is destroyed for a considerable time, if not for ever. An avenue may either be formed with turf between the row of trees, or a gravel walk, with turf on each side of it. There is one advantage if a gravel walk is formed—it can be walked upon immediately after a shower, or in damp weather, without fear of catching cold by damp feet. The trees should be planted at such distances from each other, and from the walk, as will allow of their expanding growth without fear of encroaching upon each other. Then, again, the avenue, whether short or long, should be formed with one species. They are formed at Elvaston in one direction with *Irish Yews*, in another with *Deodars*, in a third with *Araucarias*, the latter being on one of the fronts of the house, so that when you stand upon the steps leading to the entrance on that side you look down upon it, and a fine effect it has even now. In villa gardens of moderate dimensions, an avenue of Deodars would be the most elegant of all objects; and it is a matter of some surprise that our landscape gardeners do not make more use of this beautiful and perfectly hardy tree.

If, however, it is not thought advisable to form an avenue on account of its formality, conifers may be planted in different localities in the pleasure ground with the happiest effect; they may be arranged singly, or in groups of three or five together, only care must be taken to plant them so that they have room to show forth their several characteristics. We were very much pleased with the manner in which a considerable number of these trees are arranged on the lawn at Rolleston Park, belonging to that fine old English gentleman, Sir Oswald Moseley. There, in winding round the walks, you come upon a noble *Abies Douglassii*, forty feet high, and branches that spread twenty feet in diameter; then, after passing a clump of ordinary shrubs, you are startled with a noble *Pinus Sabiniana*, standing quite clear upon the lawn, and fully as large as the *A. Douglassii*; after admiring its beauty, and walking a little further, you meet with others, more rare, perhaps, and equally as beautiful. In this irregular way they form most interesting objects. Any one with an eye of taste, and a love for these beautiful plants, may form such a scene as this. Even in smaller places, a few of these interesting trees may be so placed as to give the most pleasing effect, and at a very slight expense, too; for it is a fact, that there are now in the nurseries plenty of beautiful conifers that may be had as cheaply as a common geranium, and after they are once planted there is no further expense, excepting protection whilst young. The only objection to their universal cultivation is, that they will not bear the smoke of large towns, and yet, the other day, when attending the exhibition at Regent's Park, we were much pleased to observe several species thriving well there, especially two examples of the *Abies Morinda*; these were flourishing most luxuriantly, and had attained the height of twenty feet, notwithstanding the smoke of London. This is a beautiful species, with drooping branches, and is worthy of being planted extensively. Loudon describes it under the name of *Abies Smithiana*, but it is best known under the name of *A. Morinda*. It is a native of the Himalayan mountains, where it forms a drooping tree from sixty to eighty feet high. It is perfectly hardy in Britain, and grows as rapidly as the common spruce fir. T. Appleby.

(*To be continued.*)

CULTIVATION OF CELERY.

(*Continued from page* 231.)

In continuing our observations on celery, and more especially on that portion of it intended for the main crop, consideration must be paid to the taste and wants of the family for whose use it is intended. In a general way, the amateur celery-grower is more ambitious of large, overgrown celery than the country gentleman; the former prides himself on showing it to his friends, and sometimes

it is exhibited with more of its outer covering on than is agreeable to the taste of all who like celery, whereas the latter is satisfied if it be large enough to occupy the stand allotted to it on the dinner-table. And this vegetable, unlike fruit, can be made to occupy a much less space than the cultivator intended it should, so much so, that we have no doubt some of our ardent celery-growers, who glory in sending in heads of celery as thick as horses' legs, would feel much annoyed were they to see their protégé divested of some of its outer leaf-stalks, and sent to table about half its original circumference. Yet the kitchen-authorities are perhaps wiser than the gardener; they, knowing their employer's good taste, are fully aware that, however large a head of celery may be, the centre of it is always the best, and consequently send in little but such as they are aware he will eat. Now, though it is easy to understand that the central portion of a good, large head, must be better than that of a small, indifferently grown one, yet it would be difficult to say whether a piece the thickness of a person's finger taken from the middle of a head of medium size is not so good as that from a much larger one; and if connoisseurs insist on using only this small portion, then the cultivation must be regulated so as to produce quantity rather than heads of extraordinary size, and to accomplish that object where ground is scarce, "the broad trench" system must be adopted, and more especially for the main crop. In making a broad trench, we generally allow the width to be six feet (more is inconvenient), a few inches of the earth is cast out, which may either be the top or understratum, dung or other enriching matter is dug in in the usual way, and the plants put in rows across, about a foot between the rows, and generally ten plants in each row of six feet; a space of moderate dimensions holds a good many plants, and if the ground be good, and the season favourable, the produce will be more remunerative than by the single row recommended for very early or late crops, the former on account of giving it every encouragement to hasten its growth, and the latter in order to withstand the many changes it is subject to in winter. The earthing-up of broad rows is not attended with so much trouble as is imagined; three or four thin boards the required length, laid so as to keep the earth from burying the plants, are made use of, and it is surprising how quickly two active men will get over a large piece in that way; and the celery grows equally as well as by any other, while in the application of liquid manure there can be no waste, because what escapes one plant must be taken up by another, they being so close. We generally earth this crop up with the ordinary soil at hand, but if ashes or sand were used, no doubt but the celery would keep better, the principal difficulty with sand is preventing it running in too close, and thereby sealing up some of those shorter stalks so necessary to remain; ashes are less heavy, and, consequently, not so likely to obstruct vegetation forcing its way through. Most other substances, as hay-bands, moss, litter, &c., are liable to the very bad property of inviting slugs and other insects, to which we are compelled to say the drain-tile plan, either in whole or in halves, are likewise liable, otherwise the latter plan is not without its good properties; still, worms and slugs congregate in such numbers, and occupying almost every fold of the leaf-stalk, soon render it unfit for use.

Unlike many other vegetables, the varieties of celery as a whole have improved but little during the last quarter of a century. True, the common long-stalked-piped-white may be less seen now than formerly, yet the best kinds cultivated at that period differ but little from the best of the present day, more especially in red celery, which, taken as a whole, keeps better than white, and may perhaps be more generally solid, but it certainly does not exceed it for quality and general utility. Like everything else, the varieties soon degenerate; and however unwilling the cultivator may be to introduce fresh names, we fear he must do so, if he buys his seeds at all; otherwise submit to the vexation of finding half his crop useless by its running away, becoming hollow, or otherwise inferior. These evils are not easily guarded against even by those who save their own seed, unless they take care to select only the best to save it from; in doing which bear in mind that the property of "not running away" until late in the spring is one of the utmost importance; size, quality, and other general features should of course be combined. Amateurs generally produce better celery than gentlemen's gardeners, because their object is often appearance, while that furnished by the market gardener, and sent to London, might vie with either, more especially with regard to the quality of the kinds grown. Their uniformity, and the economy of the mode they adopt, which, however, cannot always be copied in a garden of mixed produce, because there not one or two objects alone demand attention and space, but a whole legion of articles together shoulder each other for the best plans. That celery deserves one of the very best is universally admitted; yet it not unfrequently happens the plot intended for it, or part of it, may be under a crop of equal importance, which cannot be got off so early as would be desirable. In that case, the thoughtful cultivator prepares for it accordingly, and thinning his nursery beds in what plantation he is enabled to make, his plants are progressing where they are, and as nothing lifts with balls better than celery, it is surprising what large plants may be removed with very little damage; of course taking advantage of suitable weather and other favourable chances.

The summer crops which celery is often destined to follow, or wait for, are often *Peas*, *Potatoes*, *autumn Onions*, or for the last crop *spring Onions*. We usually avoid planting it on ground previously occupied by cauliflower, while spinach, even summer salads, forming, as they often do, an intermediate crop between something else, can hardly be regarded as being apart from the principals. Dry, sound ground suits it best, only it must not be that hungry dry sand or gravel which retains nothing but what the elements furnish it with, and if that aid be withheld, adieu to all prospects of good celery. Inhabiting, as it does in a wild state, a marshy situation, it doubtless flourishes best in a similar one, only such a position is inimical to its keeping, consequently a more suitable soil must be made use of; at the same time we beg our young friends to remember that this is one of the most greedy plants they have to deal with. It will devour dung by the waggon-load, and drink liquid manure like a confirmed toper, but, differing from the latter personage, its frame will present that uniform enlargement which in the (supposed) rational being takes place only on certain spots, and then not always so as to be conducive to his well being.

J. Robson.

THE MALAY FOWL.

The Malay should be large and heavy; those of the purest breeding are so compact and close-feathered, that the *weight* is greater than any one would imagine from only looking at them.

They stand very tall, and have an upright gait; the neck is rope-like, with no hackle; the legs are long, and *remarkably* long, strong and firm in the thigh; the shaft of the leg should be of *moderate* length, round, stout, and yellow; tail drooping—the more it droops the better; the head is snake-shaped, so much flattened on the top that it quite overhangs the eye; comb broad, and almost flat to the head; a pearl eye; hawk bill, in colour agreeing with the bird's plumage; a dark bill to a light bird is ugly. Their propensity for fighting is too well known to need

much mention. They will *positively* fight with a shadow, and no other bird is safe within their range.

The hens are very indifferent layers; they lay a medium-sized egg with tinted shell. The chickens, when half-grown, are gaunt, ungainly-looking young things, and, like most choice kinds, feather very slowly.

For confirmation of these points I am indebted to one who *used* to be much celebrated for his Malays, until he changed them for the more productive Cochin-China.—Anster Bonn.

BRITISH SONG BIRDS.

THE SKYLARK.

Insessores Conirostres. Alaudidæ.

Alauda Arvensis. Skylark; Common Lark; Field Lark; Laverock.

The Skylark is so general a favourite, and so well known, as scarcely to require description. Its cheerful and delightful song, fresh as the spring, is appreciated by almost every one, and on that account is most sought after by those who are fond of caged birds; whilst the facility with which it is preserved in health under confinement, and the general gaiety of its manner, and sprightliness of its song, make it one of, if not *the* most desirable of song birds. In its natural or wild state its food consists of insects, worms, grain, and seeds of the grasses, and occasionally on green food. It is often discovered in the roads, shuffling and rubbing itself along the ground, setting up its feathers in a ruffled manner, and, by a peculiar action of the legs and wings, showering over every part of its body small loose portions of the soil—in fact, "kicking up a dust" about itself, with the view, it is supposed, and I believe justly, to rid itself of the small parisitic insects with which it is so often infested; they are, therefore, described to be pulveratrices, or, in other words, dusters. During the number of years that I have kept these birds I have never known them to use the bath; nevertheless, after a shower of rain I have frequently observed them fluttering their wings, and in various ways disengaging the moisture from their plumage. I have preferred the trouble of bringing these birds up from the nest, because I find them to become remarkably tame, though wild birds will very soon become reconciled to confinement, but seldom or never become tame. When caught wild they will readily peck up crushed hempseed, wheat, embden groats, or, in fact, any small grain; if brought up from the nest, crushed hempseed and boiled bread and milk, formed into a stiff paste, was the usual food upon which I reared my birds, whose song was as perfect at mature age as any bird taken wild, and with this advantage—that they soon became familar with their keeper. As an illustration of this, I remember some years ago being highly entertained, on visiting a gentleman farmer in the village of Cowley, near Uxbridge,—whose family were seated round a table, busily employed in various pursuits, some reading, some writing, and others drawing and painting,—by observing a lark running about the table among the children's books, sometimes pecking at the writer's pen, another time running away with a camel-hair pencil in its beak, knocking and dashing it about as if it were an insect or seed; and if any of the children attempted to interrupt or intercept its wanderings or vagaries, it would immediately turn round and face its intruder with open beak, defying him with all its power and vehemence, and at length fly off with the disputed plume or pencil in its beak, hover over the table, and finally alight perhaps on the head of one of the children, or settle down amongst them again on the table. I need not say he was a pet companion and a general favourite, and was happily, when a nestling, saved from the jaws of a cat, who had picked him up in the fields and brought him into the house, when it was secured from her grasp by the children unhurt, and brought up by them. I had myself a lark two or three years, which was allowed to run about my sitting-room at will; and, although many in family, it always managed to get out of the way of one's feet so as never to get hurt. It used to run about the carpet singing as it pecked up the crumbs which dropped from the table (which was all the food it had, except now and then a tit bit, which it would take from the hands of any of my children), a pan of water being kept in one corner of the room for its use. It was so tame and intelligent as apparently to understand one speaking to it. It occasionally ran out into the garden, which was on the same level as the room, when, if observed, it would immediately crouch down as if conscious of having done wrong, and make off for the room; or if at some distance any of my children spoke to it, as they frequently did, in a scolding manner, by telling it to go into the house, or pussy would have him, he would be off in a twinkling into the parlour, and commence singing as "blithe as a lark," as if to make amends for his past misdeeds. Unfortunately, however, he went out once too often, for he never returned; and I fear some feline rascal snapped him up and made his dinner off him. The lark kept in a cage, which should be large and lofty, should have a quantity of powdered mortar or road-grit at the bottom with which to dust himself; and in addition, a nice fresh green turf, or, if not procurable, a bit of fresh raw cabbage, lettuce, or, best of all, turnip leaf, crushed hempseed and bread, crumbled and mixed together, or German paste, a receipt for which I enclose by way of postscript.—William Rayner.

GERMAN PASTE.

One pound of wheaten meal (some persons prefer peas meal), two ounces of fresh butter, four ounces of brown sugar, three hard boiled eggs, cut up very small.

Put the meal, butter, eggs, and sugar into a wide saucepan, over a clear slow fire, and keep stirring it to prevent its burning; and when it becomes dry, keep stirring it till it becomes crumbly. When this is ready (take notice, it must not be *burnt*, as this would be injurious to the birds) put a pint of cracked hempseed to the mixture, and mix them well together. If kept in a *dry place* it will be good for months.

FLORISTS' FLOWERS.

Pink (*J. Kearsley*).—Worthless, except as a common bedder. Are you aware, that to be a show-flower the ground must be *white?*

Calceolarias and Fuchsias (*E. Turner*).—All were dried up.

Pelargonium (*J. H. G.*).—All the flowers were fallen to pieces. Sports, such as being half fancy flowers, and half of the standard size and form, is not common, but the sport will possibly not be permanent, and would be no merit if constant.

Six Antirrhinums (*M. B. J——, Maidstone*).—All good forms; spikes large; flowers on strong upright footstalks. The best are *No.* 2, muzzle coppery-orange; petals plum colour. The *unmarked* specimen is pretty; muzzle creamy white; petals lilac, with darker lines of the same colour. No. 3, also pretty; muzzle white, with faint tint of yellow, petals pinkish-white dusted with purple.

Pansey (*C. F.*).—Form good, size large; but is a purple self, not superior to others already well known.

TO CORRESPONDENTS.

Honey-dew.—*J. B. P.*, who resides at Dublin, says:—"Last week, in a communication to you, I mentioned that although I had observed the wild bee and wasps gathering honey-dew on the *upper* surface of the leaves of plum and pear trees, no domestic bee was so engaged; while, on the contrary, although the domestic bee was remarked similarly employed on the under surface of the leaves of the laurel, no wild bee or wasp was found *there*. This I have frequently observed since, and from the singularity of the case I devoted some attention to the matter. By applying the tongue to the under surface of the laurel leaf, I sometimes fancied I could detect the faintest possible sweetness, but in no way sufficient to establish the belief that it arose from honey-dew; but observing the bee closely, I noticed, that having traversed the leaf hastily, it paused much longer at one spot on each leaf than at any other; this was about one-quarter-of-an-inch above the lower part where it adjoins the stalk, and close to the rib which runs along the back (I am not botanist enough to describe it technically). In the place I allude to, I

found two (sometimes three) small glands, probably, or, perhaps, punctures, made by some insect to deposit eggs, and from these little apertures I could detect a secretion, very small in quantity, but sometimes sensible to the taste. I send you several of the leaves for examination. The nature of these glands, if they be such, or of these punctures, you can perhaps determine, and whether they are artificial or natural; but they prevail both on young leaves as well as old; and I distinctly observed some under a magnifying glass of high power, which bore the appearance either of the puncture having been covered by a thin film, or of the gland not yet having burst and yielded the secretion. (They are glands.—Ed. C. G.) I have frequently noticed, and you are probably equally aware, that the wild bee, where it cannot reach the nectary of a flower, from the peculiarity of its shape (such for instance as the common bean blossom), makes a puncture near the base of the flower with its powerful forceps or jaws opening laterally, and introducing the tongue, extracts the reward of its ingenuity. I have seen the domestic bee follow in the wake of its more powerful neighbour, and expertly making use of the same orifice, glean whatever had been left in the rifled nectary; but in the case of the laurel leaf, the effect is not the result of the same cause, for I have never yet seen a wild bee there, although wild bees abound in my garden, and a populous nest of them is fixed not ten yards from my apiary, in the same wall on which the fruit-trees are trained that yield them the honey-dew. Now, referring to my first letter, the case stands thus—there is an abundance of honey-dew on fruit and sycamore trees (the latter I have since discovered), of which wasps and wild bees partake, but domestic bees do not; and there is a certain secretion (certainly not honey-dew) found on the leaves of the laurel, of which the latter, and not the former, avail themselves. The presumption is strong, therefore, that the domestic bee does not habitually use honey-dew, but it is not irrational to suppose that the atmospheric or electric condition that is conducive to honey-dew is also conducive to an extensive elaboration of honey in flowers, and affords bees a supply so large as sufficiently to account for the acknowledged rapid increase of their stores that takes place at such a juncture."

American Aloe (*A Learner, S. B.*).—This is a good time to give a larger tub to your aloe, and let it only be one size larger than the present one, as you can reduce the old ball considerably. Then is the right time to take off the suckers, and see that they are cut as close as possible to the parts they grow from, unless you wish to increase them very much; in that case, cut half-way between the green part of the suckers and the stem of the old plant from which they grow, and the parts left will soon send up more successors. Aloe tubs ought to be of the best wood, and pitched inside, and five or six holes in the bottom for drainage—as, once in seven, eight, or ten years, is often enough to retub them. From May to October, aloes will take as much water as any other plants, but they will not suffer much if they happen to go without water for a week or two. From October to April, large aloes require no water, but small plants of them should be watered once a month all through the winter, and all that they require is just to keep the frost from them. If you could keep the suckers in a cold pit, without pots, only planted in any light soil, in one corner, giving them room enough, that would be the best and easiest way to keep them for the next four years. That is the way we managed lots of them, and nothing could do better.

Weeds in a Pitched Court-yard (*M. M.*).—The best and easiest way to keep a pitched court-yard free from weeds is to sprinkle it over with rough salt occasionally. June is the best month to make *cuttings of double Wallflowers*, but you are not too late yet.

Bartonia Aurea (*S. S.*).—By the time you see this, your Bartonias will not be worth the trouble of doctoring. You had them too thick; a foot apart would be too close for them. Moss would rather add to the disease. The only cure now would be, to cut two plants close to the ground, and leaving the third all over the moss; pulling any up would disturb or destroy the rest. We shall look over our list of annuals and early perennials, to see once more what can be done for the spring flower-garden. Put us in mind of this promise six weeks hence.

Bees.—*B. B.* writes thus:—"A stock of bees, on which was an earthen pan with glass window, and hole at top, sent out a swarm weighing 4¼lbs. While the bees were settling, we proceeded to remove the pan, and close the four-inch hole at the top of the stock. The pan, we found, contained honey, brood, chiefly drone, and a royal cell, with a worm in it and jelly. It immediately occurred to me, that this young queen, when hatched, might be of use in the autumn in forming an artificial stock from, so-called, burnt bees, the age of whose queen was unknown. I, consequently, set it on a board in the place of the old stock, which I shall keep at a distance, stopped up for two days. A large number of bees went to the pan of those which were out, some having bee-bread. On weighing this pan in the evening, 1st July, I found I had in comb, bees, honey, and brood, 3½lbs.; it was about two-thirds full of comb, but little honey; when full, it would contain from 8 to 10 lbs. This day (2nd July) and the two preceding, have been very fair honey days; we have not had many such this year before, and none of the stocks have been able to store honey. Comb seems to have been readily made. I have one hive that *abounds* with drones, and another without any. Should I do well to take up the former, as it has only increased ¾ lb. in two months? and might I, with advantage, introduce drones into the other?" By removing the stock, and putting in its place the pan containing an embryo queen, you have succeeded in making an artificial swarm, which, with the addition of a few bees in autumn, and a little food, if required, will, in all probability, make a good stock. Let your hive that has increased only ¾ lb. remain. This change of weather may enable them to store some honey. You will gain nothing by adding drones to your weak stock.

Taylor's Bar Hive (*A Correspondent and Old Subscriber*).—You had better unite the cast to the swarm, and leave it to the bees to kill the queen.

Golden Pheasants Eggs (*Ibid*).—Can any of our readers state where some of these can be purchased?

Furnishing a Small Greenhouse (*An Admirer, &c.*).—Your *Vines* may be:—1 Muscadine; 1 West's St. Peters; 2 Black Hambro's. *Peach* for back trellis, Galande. *Nectarine* for the same, Elruge. We think you will do well to place a pit in the interior for your forced vegetables; and why not grow your cucumbers in boxes suspended about two feet from the apex of the ridge? They will do well there, if you are warm enough, and well supplied with atmospheric moisture. Your interior pit might then be reserved for kidney-beans, &c., and we should use fermenting material. In the back shed, of course, you will have plenty of mushrooms, and a bin for forcing sea-kale, chiccory, rhubarb, &c. All those things are easily carried out under circumstances like yours. As you do not want many pot plants, you will accomplish much of the substantial kind.

Vine from Canada (*W. Warridge*).—Your vine may be a hardy variety—a great desideratum—but we should think the things of Upper Canada ought by this time to be common to all Europe. Never despair, however; try and prove it. Apply three inches of rotten and rich manure over the roots; try and get one forward shoot, and when half-a-yard long, pinch the top, and try by all means to ripen the shoot by well-managed laterals, and other appliances. Let some friend, in a better situation, have the prunings in November, to propagate. Mr. Rivers, of Sawbridgeworth, for instance.

Driving Bees.—"Your correspondent, a 'Country Curate, Rutland,' says that he has tried the driving system of *A Country Curate*, in three cases, without success. 'I could not,' says he, 'get the bees to ascend, except very partially, and in no case succeeded in obtaining the queen.' To this I reply, that, in order to success in driving bees, several conditions must be supposed. First. That the hive be full of comb and bees. Secondly. That the queen be neither too young (*i.e., uninpregnated*), nor too old. Thirdly. That the operator go to work according to the approved rules. The best time I *now* believe, and find, is when the bees are mostly *at home*, and generally in the early morning. There must of course be a queen in the hive. *Item.* The hive must not too violently be handled, or the ascended bees may chance to be shaken down again. In spite of all, failure will sometimes happen; for the management of bees is a science that will often baffle every *rule*. If I do not succeed the first time, I try again. I have made sometimes three or four attempts before success, but I know it is of very little use to attempt driving, if the hive is not *well filled with comb and bees*. But ordinarily, I have no difficulty whatever with this process. Your correspondent further says—'I have also attempted the Schirachean method twice, with equal failure.' Reply. So have I, and more than twice; but 'practice *makes perfect*.' I do not, however, generally recommend the adoption of the Schirachean system, until the bee-master has been very practically acquainted with the habits of bees and their economy. Be this plan resorted to by the amateur, and the experienced alone. As, however, I am about to put forth on the subject in your pages more at large, I shall say no more here. Your correspondent complains of the season,—who does not?—save those, perchance, who have succeeded in their efforts to prevent the issue of swarms, which was never more difficult than this spring, when bees would swarm, as all my hives have swarmed, *nolens volens*, they are all poorly off, save my gigantic hives of the 15th of May, 1851, and an artificial *driven* swarm of the 27th of April last. Indeed, I have been obliged to feed all last month, more or less, and have lost one swarm from starvation."—A Country Curate.

Tobacco Plants (*J. N., Omagh*).—The moment you see them sending up a stem to flower, break it off, and the strength will then be expended on enlarging the leaves.

Roses not Flowering (*Ibid*).—Unless your two standard roses were closely pruned, the cause of barrenness is at the roots. Take them up in November, and root-prune them, cutting all the large ones to within six inches of the stem. A list of the *best and hardiest fruit* for a wall in the north of Ireland will be given before planting time.

Difference of Rose Varieties (*B. B.*).—No one has yet been able satisfactorily to give marks of difference between the different sections of roses. We have failed hitherto in the task, and Mr. Beaton thus replies to the inquiry:—"The question as to 'the difference between Perpetual, Noisette, Bourbon, and Tea roses,' might be replied to by another question as to 'the difference' between certain breeds of domestic animals. What is the difference between a greyhound and an Italian greyhound, a stag-hound, fox-hound, and all other hounds? Just as much as is between so many varieties of hybrid-perpetuals. Then hybrid-perpetuals differ from Noisettes as hounds do from spaniels or sky-terriers; and Bourbons differ from both as much as a shepherd's colly differs from either, and so on with the differences of all families of domesticated plants and animals, and if we were to fill the whole of one of our monthly numbers with the technical descriptions of 'differences,' we could only make the subject more difficult to study. These thing can only be learned by the evidence of the senses." A list of *autumn sown annuals* is in preparation.

Blight on Rose-trees (*Subscriber*).—Some blight "has stripped every leaf and bud from a bed of dwarf hybrid perpetual roses," and you ask the *cause*; but no one can tell. You ask, also, if it is right to prune them now? Not all; let them rest awhile, and they will be green and bloom finely in the autumn, if you stimulate them with two or three dressings of liquid-manure, but not until you see by their young leaves that they are in growth again. On light soils, and in many situations, perpetual roses often look badly at this season, but they are just in the right way for all that, and no one need be alarmed; on the contrary, we are sadly put out when we see our roses fresh and green at the end of July, because they never blossom or open their blossoms well in the autumn when that is the case. It is possible, however, that the climbing roses and the plum tree have robbed your dwarf roses; and if so, they will do no more good there this season, nor till you rid them of their powerful rivals. The name of the yellow flower is *Funkia*, or *Hemerocallis fulva*. That is, "the brown-yellow day lily."

Weeping and Union Roses (*S.*).—All the best climbing roses are the best for "weepers," such as *Ruga, Bennet's Seedling, Dundee Rambler*, from the *Ayrshire* section. *Myrianthes, Felicite Perpetuelle, Princess Louise, Rampant*, &c., from the section of evergreens; then there is the *Crimson Borsault, Madame d'Aublay*, and *Sir John Sebright*. You can gain nothing by having "unions" of hybrid perpetuals; all the best of them being of one colour. It is only among summer roses that these colours for contrast can be had.

Pyrus Japonica (*Evesham*).—Yes, you are quite right, spur prune it now, as you would a pear or apple-tree. What splendid specimens your standard Japonicas must be, "twelve feet high." Do you know whether they are grafted, or on their own roots, and if grafted, on what stock?

Ivy and Climbers (*Tyro*).—When ivy and roses are used to cover a wall like yours, twelve feet high, plants of both should be planted the same season, and by keeping the roses away from the ivy as much as possible, until it covers the wall, then fastening the roses, here and there, to the stems or shoots of the ivy. The two may go on for years and years, without doing harm to each other, but it will never do to plant young roses against an old ivied-wall. *Clematis montana* is more likely to smother the ivy than be put to the worst itself.

A Principle in Budding (*Evesham*).—Three friends, and great rose growers, met together the other night, and with other good things, they must have a *smack* at philosophy. Tam O'Shanter said, "when you bud a rose, cut off the extreme end of the wild branch, in order to throw the sap into the bud." "Nay, nay," quoth Souter Johnny, "that mona be, but leave it its full length, so as not to stop the sap from rising." And the Souter has the best of it, as he had that "awfu night." Buds do not unite as soon as they are inserted, so they cannot act like a new joint-flow by a plumber; but if the wild shoot is two feet long, taking off the *extreme point* does neither good nor harm; but if cut half way down it might kill the bud.

Wash for Aphides (*Novice*).—Tobacco-water is the best and only safe "wash" for roses in summer. They do not bud or graft such things as dahlias in the sense of your question, but you may splice tops and side pieces on the tubers, so as to look like grafting and budding in the spring. We cannot "account" for your *strawberries going blind*. Use runners by all means in preference to old plants.

Lovell breed of Poultry.—Several correspondents, besides one in our last, are anxious to have a description of this breed. They all agree in thinking them a sub-variety of the Cochin-China. We shall be very much obliged by any of our readers sending us particulars concerning them. Some call them "the Lawell breed of Cochin-Chinas."

Digging Fork.—A correspondent (*B., Waterford*), says he has formed an implement like that mentioned at p. 80 of the present volume, but with some improvements, and that he finds the following proportions "most satisfactory." Length of prongs, 12½ inches, width of prongs from point to point of the two outer ones, 5½ inches; space between the middle prong and each of the outer, 2 inches; width of top of the prongs, 7½ inches; length of strap fastening the head to the handle, 11½ inches; total length of handle from the top of the prongs to the top of the hand-rest, 3 feet 5½ inches; circumference of handle, 5¼ inches; prongs to be square, but ending in a spear head, as shewn at p. 80.

Preserving Pine Apples (*L.*).—They should be taken before they are ripe, and be kept for five days in some strong salt and water. Then put a good layer of vine leaves at the bottom of a large saucepan, and put in your pine apples, fill up the pan with some more vine leaves, and pour over them the salt and water in which the fruit was kept. Cover very close, set over a slow fire, and let them stand until they are of a fine light green colour. With a quart of water and a pound of double-refined sugar make a *thin* syrup, which, as soon as *nearly cold*, put into a deep jar, and place the pine apples in with their tops on. Let them stand a week, taking care that they are well covered with the syrup. At the end of the week boil up the syrup again, and pour it very carefully into the jar, or the tops of the pine apples may break. Let it stand eight or ten weeks, during which time repeat the boiling of the syrup twice or thrice to keep it from moulding, remembering always to let it be nearly cold before it is returned to the jar, and when the pine apples look full and green make *thick* syrup of three pounds of the same sugar as before, with just a sufficiency of water to dissolve it in, boiling it well, adding a few slices of white ginger, and when nearly cold take the pine apples out of the first syrup, and pour this over them. Tie down close with a bladder, and they will keep for years.

Scaring Starlings (*S. C.*).—We know of no mode of frightening these bold birds away from cherries; has any one of our readers been more successful?

Diseased Grapes (*A Subscriber—Guernsey*).—They were shanked, and ulceration had spread to the berry from the stalk. More, and drier air, by means of fires during the wet, cold days of June, and a protection of the roots from cold and wet, would probably have prevented the mischief.

Polish Fowls.—*C. M.* wishes to know where a pair of pure black Poland fowls with white top-knot can be had, and at what price.

Ornamental Fowls (*A Subscriber*).—We know of none that can be allowed to run freely in the garden without liability of injury to the flowers, &c. Guinea fowls are less mischievous than peacocks.

Plants Clubs.—We have the name and address of a gentleman who will be ready to co-operate.

Horticultural Society.—*Quidam* may apply to Mr. Orr, 2, Amen Corner, Paternoster Row.

Alphabetical List of Roses (*R. E. B.*).—We fear to undertake such a list of the thousands of varieties. If you obtained a catalogue from each of the great rose-growers you would usually find what you require.

Space for Poultry (*C. C.*).—We know where a Cochin-China cock and six hens are very successfully kept in a space about four yards wide and twelve yards long, partly turfed, and partly the bare soil. There is, of course, a small poultry-house attached, and the brood hens are kept under coops, which allow the little chickens to run about in the garden at large.

Gardener's Place (*M. N. G.*).—Write to Mr. Appleby, 1, Princess-street, Edgeware-road, London.

White Comb in Poultry (*X. Y.*).—Try an ointment made of cocoa-nut oil and turmeric. We have tried it ourselves with perfect success. Rub the ointment upon the white parts three or four times, at intervals of two days. No other oil or grease but that of the cocoa-nut will do.

Aphis on Cherry-tree, &c. (*J. H., Wilts*).—The black insects on your cherry-tree, and the green ones on your roses, &c., are all of the genus aphis, or plant louse. Either tobacco smoke or tobacco water, repeated two or three times, will destroy them.

Grub (*S. C.*).—The grub which had eaten through the strawberry root is the larva of the common Cock-chafer, or May Bug (*Melolontha vulgaris*).

Names of Plants (*T. M. W.*).—*Pimelea rosea.* (*H. H.*).—*Caprifolium flexuosum*, certainly. (*Allendale*).—Your specimens are only varieties of *Polygala vulgaris*. (*Mary A.*).—Your plants are—1, *Prunella vulgaris*; 2, *Cerastium tomentosum*; 3, *Thymus serpyllum*; 4, *Geranium striatum*; 5, *G. nodosum* (?); 6, *Campanula*—we cannot be certain what species without its root leaves; 7, *Veronica*—without any leaves we can only say it may be *Veronica latifolia*; 8, *Erinus alpinus*; 9, *Veronica Austriaca*; 10, *Silene inflata*. (*J. F. W. M.*).—1. *Geranium pratense*; 2. *Geranium collinum?* not certain the species; 3. *Geranium pyrenaicum*; 4. *Pelargonium odoratissimum*; 5. *Pelargonium australe*; 6. *Erica ventricosa stellata*; 7. *Momoraica Charantia*. 4 and 5 are two old species, and 5, as you say, not very commonly seen. 7, we should say, was a worthless, weedy plant. (*Brentinby Cottage*).—*Erigeron philadelphicum*, a very desirable hardy herbaceous plant. Your *Creedling* fowls are probably Creoles. *Hortensia* is now *Hydrangea hortensis*. (*W. K. W.*).—Your orchid is only a sport of the butterfly orchid, *Orchis bifolia*.

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Advertisements.

WEEKLY CALENDAR.

M. D.	W. D.	JULY 22—28, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
22	TH	Great Burr-Reed flowers.	30.036 — 29.806	76—58	E.	08	11 a. 4	1 a. 8	10 53	5	6 7	204
23	F	Hooded Willow Herb flowers.	29.737 — 29.550	71—57	E.	70	13	0	11 14	6	6 9	205
24	S	Water Plaintain flowers.	29.553 — 29.473	60—53	S.W.	28	14	58 a. 7	11 36	☽	6 11	206
25	SUN	7 SUNDAY AFTER TRINITY. ST. JAMES.	29.888 — 29.469	71—51	N.E.	—	16	57	morn.	8	6 12	207
26	M	[DS. CAMB. B. 1797.	29.749 — 29.656	69—44	W.	01	17	55	0 3	9	6 12	208
27	TU	Swifts depart.	29.914 — 29.898	72—57	S.W.	02	18	54	0 36	10	6 11	209
28	W	Wood Sage flowers.	29.895 — 29.803	69—57	S.W.	06	20	52	1 17	11	6 10	210

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 73.6° and 52.3° respectively. The greatest heat, 92°, occurred on the 25th in 1844; and the lowest cold, 40°, on the 24th in 1838. During the period 99 days were fine, and on 76 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

(*Continued from p.* 235.)

HELLEBORUS. HELLEBORE. BEAR'S-FOOT,

GENERIC CHARACTER.—*Calyx* none. *Petals* five, below the seed vessel, roundish, blunt, concave, permanent. *Nectaries* more numerous, much shorter, in a circle within the petals, deciduous, each of one leaf, tubular; narrower in the lower part; with two upright, blunt, unequal lips at the orifice. *Stamens* very numerous; *filaments* awl-shaped. *Anthers* terminal, erect, roundish, of two cells, bursting at the edges. *Germens* several, from three to ten, egg-shaped, compressed, erect. *Styles* awl-shaped. *Stigmas* terminal, roundish. *Seed-vessels* (*follicles*) egg-shaped, compressed, leathery, keeled, beaked with the styles, opening at the rounded inner margin. *Seeds* several, oval, at the edges of the *seed-vessel*, attached, in two rows, to a linear, double-notched, deciduous *receptacle*.

HELLEBORUS VIRIDIS: Green-flowered Hellebore; Bastard Black Bear's-foot.

Description.—It is a perennial. *Root* fleshy, and black, with many long, strong fibres. *Stem* eighteen inches high, erect, round, smooth, rather branched at top, leafy, reddish at the bottom. *Leaves* smooth, soft, light green, those at the root on long foot-stalks, but those on the stem are almost stalkless, and partially sheath the stem; the lobes of the leaves (by some called leaflets) are from seven to ten in number, and are spear-head shaped, pointed, sharply saw-toothed on their edge. *Flowers* on stalks an inch long, springing from between the leaf and the stem, round, bearing either two or one nodding, green, terminal flowers or flower. *Nectaries* eight or ten, as long as the styles, rims a little saw-toothed and bent in, upper lip as if cut off and slightly two-toothed. *Stamens* fifty or more, with pale yellow *anthers* not sharp pointed. *Pistils* usually three, rarely four or five. *Seeds* cylindric-egg-shaped, rather wrinkled, and of a dark lead colour.

Places where found.—Woods and thick hedge-rows on a chalky soil.

Time of flowering.—April—May.

History.—The generic name is derived from two Greek words, *elein*, destructive, and *bora*, fodder, alluding to its poisonous qualities when eaten. The powder of the dried leaves used as snuff are said to have cured several persons of that peculiar affection of the eyes which enables them to see best with a very small amount of light. Its roots are often sold as those of the Black Hellebore (*H. niger*). Indeed, Haller speaks of all the virtues of the Hellebores under this species, and it seems to have been substituted by the German medical practitioners for what is considered to have been the true Hellebore of the ancients, *H. orientalis*. Parkinson says, "an idle conceit possessed many in ancient times, that he who would dig up the roots hereof, had need to eat garlick beforehand, lest the evil vapours that should arise from it in the digging up should offend the head and brain." The medicinal properties of the next species are also possessed by this.

HELLEBORUS FŒTIDUS: Stinking Hellebore; Bear's Foot; Setterwort.

Description.—It is a perennial evergreen. *Root* small, but furnished with very numerous, slender, dark-coloured fibres. *Stem* from about two to nearly three feet high, round towards the bottom, naked, marked with alternate scars, showing where former leaves grew; much branched at the top. *Leaves* formed of seven or nine long narrow lobes joined at their base, commonly four on each side, and one in the middle or the centre of the leaf-stalk; each lobe saw-edged and sharp-pointed. *Leaves* of a very deep green, but the branches, stipules, flower-stalks and flowers, are a pale, yellowish green. At the divisions of the branches are broad-spear-headed, stem-clasping *stipules*, deeply two-cleft at the end. At the bottom of each flower-stalk is a broad, whole, spear-headed *bracte*. Both the stipules and bractes are often purple, and all the plant is smooth. *Flowers* almost globular, drooping, on stalks forming a kind of panicles; petals roundish and green, with purplish edges; *stamens* the length of the petals, with white anthers. *Germens* three, hairy. *Nectaries* from five to eight, notched.

Places where found.—Hedges and other shady places on chalky soils.

Time of flowering.—December—April.

History.—Gerarde says it was in his time called the *Setter-wort*, *Setter-grass*, and *Ox-heal*. These names are from its use in rowelling cattle; that is, making a seton of the root, and putting it through the animal's dew-lap. This operation old farriers called *settering*, a corruption, perhaps, of setoning.

Ten to fifteen grains of the dried leaves are frequently given to children to destroy worms, but they must be used sparingly, being violent in their operation; and instances of their fatal effects are recorded. A decoction of a drachm of the green leaves is equal to fifteen grains of the dried leaves. The powdered roots mixed with meal destroy mice. A decoction of one or two drachms operates as a drastic

purgative. Mr. Purton never could increase the dose of powdered leaves beyond ten grains without considerable disturbance in the intestinal canal; nor can the same quantity of the fresh-dried plant be exceeded with any degree of safety. Experience may be too dearly purchased by trials of herbs so alarming in their effects as are even the British species of Hellebore, or it might be regretted that medical practitioners have acquired so little accurate knowledge of their virtues. The different species of Hellebore flourish under the shade of trees, and exhibit their singular blossoms during the most sterile season. They are, therefore, acceptable in shrubberies, especially the *Christmas Rose*, supposed by some to be the real Black Hellebore of the ancients. (*Smith. Martyn. Withering. Parkinson.*)

[The following memoir, furnished us by Mr. R. Hogg, author of *British Pomology*, is so excellent, so full of information now for the first time published, and is so relative to those magnificent displays of American plants by which we have recently been gratified, that we give it this prominent position.]

Enthusiasm, indomitable perseverance, and intrepidity, combined with patient endurance of privation, are essential to constitute a traveller properly so called; and in all who are entitled to that designation we find various degrees of these characteristics exhibited. The botanical travellers which this country has produced are not the least in importance in these respects, and the names of David Douglass, the two Cunninghams, and several others we could mention, claim to be recorded among the most distinguished of this or any other age. But justly celebrated as these men are, we question whether one of them furnishes such a combination of these characteristics as is to be found in John Fraser.

As in this busy world of ours, and in this, the busiest country in it, there is much thought for the present, and much forgetfulness of the past, so, it is many years since the name of John Fraser ceased to be a familiar word. There are not many now living who knew him, and we fear there are almost as few who ever heard of him. But if any there should be who ask, "Who *was* he?" we reply, he was the man to whom Europe is indebted for the magnificent hybrid Rhododendrons that of late years have caused the "American grounds" of the Old World to heave with a perfect ocean of beauty and grandeur. Who, then, knowing this, could look on that scene of splendour which for the last three weeks has dazzled the eye and delighted the senses of those who visited the tents in the Royal Botanic Society's Gardens, in the Regent's Park, and not venerate the name of *John Fraser?* This were indeed distinction enough for any one man. But it was not alone the *Rhododendron Catawbiense* (which is the basis of almost all these hybrids) that he discovered and introduced to this country, it is to him we are indebted for *Andromeda floribunda*, and all that is interesting in *Azaleas*, *Kalmias*, *Andromedas*, *Vacciniums*, *Magnolias*, *Menziesia globularis* and *ferruginea*, many species of *Oaks*, *Pinus*, *Phlox*, *Œnothera*, and a list too long to enumerate here, amounting to somewhere about *two hundred and twenty distinct species of American plants!* all collected under hardships and privations, crowned with less remuneration, and with more hopes disappointed, than any collector either before or since has ever experienced. He started on his perilous undertaking single-handed and alone, with no society to support, and no patron to encourage him; his labours were labours of love, and his reward—a too much-forgotten name.

This extraordinary man was a native of Scotland; he was born in 1750, at Tomnacloich, near Inverness. His father was a highly respectable farmer, and occupied the same land which his ancestors had done for many generations previously. How his early life was spent cannot now be ascertained, but it is supposed that he arrived in London about the year 1770, being then in the 20th year of his age. During the early part of his life he laboured under a delicate state of health, being, in fact, affected with consumption. Finding his health declining, his friend, Admiral Campbell, then commanding the Newfoundland Station, induced him to accompany him to that Colony, with the view of arresting the progress of the disease; he accordingly left England, and arrived in Newfoundland in 1780. He had not been long there before he found himself thoroughly restored, and he devoted his time to exploring the botanical productions of that country. He was always an ardent lover of plants, and here he found an extensive field, and new objects for admiration, among which he remained till 1784. He had now acquired such a taste for discovery, and such a habit of restlessness, which so prevented him from setting down to any fixed occupation, that in 1785 he set out on a journey to the Southern States of North America, and during two years he was engaged in investigating the botany of that country, which resulted in many valuable additions being made to the collections at home. It was when on this journey that he met, and formed an intimate acquaintance, with Thomas Walter, the author of the *Flora Caroliniana*, a work which Fraser undertook to publish on his return to London, and which he did, as is evidenced by the title page, "Londini: Sumptibus J. Fraser," and to which is prefixed, by way of frontispiece, an engraving, inscribed, "To Thomas Walter, Esq., this plate of the new Auriculated Magnolia is presented, as a testimony of gratitude and esteem, by his much-obliged, humble servant, John Fraser." He again left England, in 1788, on a second expedition to the Southern States, and this was attended with as great success as the former, for on this occasion also he sent home many new and valuable plants. While on this journey he formed an intimacy with the elder Michaux, who had then just entered on his labours as collector for the French government.

Between the years 1789 and 1796 he twice visited North America, still with the same object in view, and still with the same success. During this period he traversed the Alleghaney Mountains, penetrated into several of the Indian settlements, and exposed himself to an amount of privation and hardship such as few

other men could have undergone. And here, be it remembered, the America of seventy years ago was not the America of to-day; much of the soil that is now traversed by the locomotive, and gladdened by the joyful sound of the gospel and civilization, was then the hunting field of the Indian, and the scene of many a bloody conflict. Where now the ploughshare and the pruning-hook pursue their quiet and ennobling course, the scalping-knife and tomahawk savagely reigned. Few now can realize what a traveller like John Fraser had then to undergo.

After his return to this country, in 1796, he visited Russia, taking with him a large collection of plants, the result of his labours in America. These he submitted to the Empress Catherine, who so highly appreciated their value, and esteemed the character of the man, that she requested him to set his own price upon them, which was accepted. After the death of the Empress Catherine he was requested again to visit Russia, when he received commissions from the Empress Maria to supply further collections to the Imperial Gardens of Gatschina and Perlorskoe; and such was the favour with which the imperial court regarded him, that, in 1798, an ukase was issued, signed "Paul and Maria," appointing him their botanical collector. This gave a fresh impulse to his untiring spirit, and, in 1799, he for the sixth time crossed the Atlantic, accompanied on this occasion by his son John,* to prosecute, in the Northern and Southern States, that discovery in which he had already been so successful. Having on this expedition penetrated to the far west, it was on the summit of the Great Roa, or Bald Mountain, that he discovered the *Rhododendron Catawbiense.* Speaking of this occasion, Mr. John Fraser, jun., said to me, "I shall never forget so long as I live the day we discovered that plant. We had been for a long time travelling among the mountains, and one morning we were ascending to the summit of the Great Roa, in the midst of a fog so dense that we could not see further than a yard before us. As we reached the top the fog began to clear away, and the sun to shine out brightly. The first object that attracted our eye, growing among the long grass, was a large quantity of *Rhododendron Catawbiense* in full bloom. There was no other plant there but itself and the grass, and the scene was beautiful. The size of the plants varied from seedlings to about two feet in height, the habit being evidently diminutive, from the high altitude at which they grew. We supplied ourselves with living plants, which were transmitted to England, all of which grew, and were sold for five guineas each."

On the termination of this journey through the States, they visited Cuba, in 1800, but on account of the war which then existed between Spain and Great Britain they were obliged to procure passports, and travel as American citizens. On the voyage they were wrecked on a coral reef, about forty miles from land and eighty from Havannah. For six days they, with sixteen of the crew, endured the greatest privations until picked up by a Spanish boat and conveyed to land. Through the interest of the American consul they were allowed to proceed overland to Havannah, where they met with the celebrated travellers Humboldt and Bonpland, from whom they received the greatest kindness, and to whom they communicated the nature of their journey. Humboldt relating in confidence to the Spanish governor that they were Englishmen, and botanical collectors, he replied, "Though my country is at war with England she is not at war with the labours of these men." They pursued their course unmolested, visited the mountains of Cuba, and discovered many new and valuable plants, among which was *Jatropha panduræfolia.* Having made his collections, they returned to America in 1802, and thence embarked for England, but after being some time at sea, the ship sprang a leak, and was obliged to put into Port Masson, in New Providence. On arriving in England a greater disappointment awaited Mr. Fraser, for on landing he heard that the Emperor Paul was dead, and the Emperor Alexander refused to sanction the engagement entered into by his predecessor. In the Dowager Empress Maria, however, he met with a friend, for she fully discharged his account, and, in addition, presented him with a handsome diamond ring. When in Russia, in 1796, he procured the Black and White Tartarian Cherries, which are sometimes called Fraser's Black and Fraser's White Tartarian Cherries, and introduced them for the first time into this country.

In 1807 he made his *seventh* and last voyage to America, again accompanied by his son, and again he was successful in many new discoveries, with which the son returned to England, leaving the father to prosecute his discoveries. He again visited Cuba, and in 1810 returned to England. During this last journey he had the misfortune to fall from his horse, near Charleston, and broke several of his ribs. From this accident he never fully recovered, and, after forty years of unwearied zeal and activity, he died, at Sloane Square, Chelsea, in April, 1811.

The herbarium collected by Thomas Walter, the author of *Flora Caroliniana*, along with that of John Fraser, was presented by Mr. John Fraser, jun., to the Linnæan Society about three years ago.

After his second return to England from America, Mr. Fraser established the "American Nursery," in Chelsea, as a receptacle for the plants which he discovered and introduced. This nursery was situate on the east side of the present Royal Military School, and extended over twelve acres. After his death it was discontinued, and is now, what remains of it, occupied as a market garden.

Thus lived, and thus died, John Fraser, F.L.S., one of the most zealous and disinterested, and at the same time most successful, botanical collectors which this country has ever had.

The following letter from Mr. Fraser, dated January 30th, 1787, and written at Charleston, in South Carolina, is among the *Forsyth MSS.*

* Mr. John Fraser is still living, at an advanced age, at Harcourt Villa, St. John's Wood, and to him the writer of this notice is deeply indebted for the greater portion of the facts which are here recorded.

MR. JOHN FRASER TO MR. FORSYTH.

This is only to give you a short account of my proceedings. On the 11th of November, 1789, I set off from this place in a horse and chaise, which I purchased, in company with young Mr. Brooks, who was to have paid half of my expense when I sent Dr. Porter by water to Savannah, and in six days we arrived safe in Savannah (distance 125 miles). Being covetous of a large collection, left Porter with Brooks, at Savannah, and went myself to Sunburry, forty miles to the southward, and every mile of the road afforded me a new scene, different to what I had seen before. There being no inns on the road, I was forced to beg a night's lodging at a Colonel Elliot's, where I received the greatest civility. After making many enquiries concerning plants, Colonel Elliot's son informed me where there was a very pretty red flower growing, and in the morning got his horse and went with me; to my great satisfaction, I found it to be the Scarlet Ezilia (Azalea?). Being destitute of hoes, spade, basket or ropes for carrying it, went to a plantation and borrowed a hoe; as necessity is the mother of invention, I pulled off my great coat and wrapped them up in that, and carried them before me till I came to a public house, five miles from Sunburry, where I had an invitation from the landlord to go to several of the Sea Islands, where he and several others were going on a shooting party for ten days. This was too great a temptation to resist, although I promised to return in three days; but being convinced, as I thought, in my own mind of my friend Porter taking sufficient care of the collection I had already left, I accepted the offer. My friend Mr. McIver, at whose house I should have been, was not at home, but I met with every civility I possibly could expect. The day following, the hunting party called on me, according to promise; we set off, seventeen of us, in a long canoe, made of the solid body of a large tree. All that night we lay on moss, under a cedar tree; it rained all night, and next morning we had for breakfast oysters and hominy, and set out for Saplo Island, and arrived there at noon, same day; after, the party went deer-hunting, and I in company plant-hunting, but, to my great mortification, in the evening I lost the party. After travelling for several hours backwards and forwards, without any likelihood of finding out our camp, I climbed up a tree, for the purpose of staying there all night, but after being there for some time I saw a very large light approaching, and two or three negroes, who appeared to me as so many devils, but, to my great comfort, it turned out to be negroes sent out in order to find me. The cold, hunger, and fatigue I underwent that night made me quite ill, and, to add to that, it rained all night, without having any shelter; next morning the medicine prescribed for me was a glass of gin and pepper, and, indeed, had they given me arsenic I should have been thankful, I felt myself so ill; but luckily next day I got so well as to shoot a deer and some birds, and to collect some plants and seeds, and still continued getting well, notwithstanding I had not pulled off my coat for ten days. On my return to Mr. McIver's I found him at home, when he requested me to go a second expedition with him to the different Sea Islands, and to Turtle River, in his own boat, which offer I accepted, and on our setting off, to our great surprise, met Porter, near Sunburry, in a canoe, pleasuring, with some gentlemen who had come from Savannah; told me Brooks was to remain at Savannah until I returned, and then go to the Indian country with me, which made my mind easy in regard to the seeds and plants I had left.

After exploring Saplo, Blackbeard, and Frederico Islands, came to Turtle River, and sent what I had collected there in a boat to Savannah. Having left the boat there, Mr. McIver and I set off to Sunburry across the main land, sometimes on foot and other times on horseback. The second day, Mr. McIver not being very well, I left him at a house in the woods, and travelled along myself to Sunburry, as I was anxious to reach Savannah, in order to send my collection to Charleston. On my arrival I found, to my great surprise, my friend Brooks with the seeds gone without settling with me for his expenses. I overlooked this fault of Porter's, and left him in charge of my horse and chaise, to bring after me, and went immediately on board a schooner for Charleston, in order to overtake Brooks. On my arrival here, I made strict enquiry after Brooks, and was informed of his being on board a ship then getting under weigh for London, on board of which I repaired, and had just time to ask him what he had done with the seeds, and his reason for behaving so. He told me he could not think of staying with such a disagreeable young man as Porter. My particular reason for accompanying Brooks was his understanding stuffing birds and collecting insects

I beg you will tell Dr. Letsom that I have got a large hornet's nest, that hangs on the trees, and one ditto for my friend Forsyth. Any omission that I make in writing I hope will be forgiven, as I hope I shall be able to convince them of my perseverance on my return home. My duty to Sir Joseph Banks, and he shall be sure to have some plants of the gentian, both dead and alive. In one of the boxes there is a new Laurus which you will receive by this ship. You will not know it from the Laurus sasafras, but you will know it by being No. 18. Monsieur Michaux tells me Linnæus gives no account of it. I shall think myself very unfortunate if I have not sent home two or three new sorts, and I still hope to add many more. By the time I return from the Indian country, I expect the goods will be here that I have written for, and also to hear from you, and, at the same time, whether it is your wish that I should perform the journey I mentioned in my last letter. If so, you must give directions how I must draw on some of you, as the paper medium of this state goes nowhere else. My friend Monsieur Michaux and I have altered our plans, and are now going to the Indian country; for had we gone to the Bahamas, the spring would have been spent before we could have returned. The Frenchman seems very courageous, and means to go as far as the Mississipi; and I have every reason to believe I shall not be the one that will give out first, for I have already seen one instance of the Frenchman's courage, which was in the following manner:—Having, amongst my collection I sent home in the *John*, several plants which he had not before seen, which he was desirous of seeing, the ship being then at anchor close by the bar, five miles from the harbour, we took a boat and went on board, and by that time it was dark, when it began to blow excessively hard, and lightened much, which terrified the poor Frenchman so much, that it was with the greatest difficulty he could be persuaded to get into the boat in order to go ashore again, notwithstanding he was almost like to go to sea for England next morning, as the ship was then a-going. In box of plants No. 3, you will find a Supple Jack (*Paullinia polyphylla*); I thought it might be worth a place in your museum; in the manner you see it grow, it reaches the tops of the highest trees in this country, and then crosses other trees to the distance of 300 feet, without observing very little difference from the top to the bottom. I have sent home several young plants of it. I hope, on my return, to add much to your museum; please observe the same to Dr. Letsom.

GOSSIP.

At a recent meeting of the Entomological Society, it was stated by Mr. Hunter that the *Black-beetles* (*Blatta orientalis*), so annoying in some kitchens, are readily destroyed by giving them powdered plaister of Paris (gypsum) mixed with oatmeal.

As an answer to several correspondents, who mention with surprise the prices asked for *fancy live stock*, we will append a priced list of specimens exhibited a few weeks since by Messrs. Jessop, of the Aviaries, Cheltenham. Those who complain of the prices do not stop to calculate the original cost of importation, the uncertainty of rearing the progeny, and the length of time before a purchaser is found.

Curasson, 10 gs.; two pair of *golden pheasants*, 4 gs. per pair; two pair *silver pheasants*, 4 gs.; *white fantail pigeons*, 7s. 6d.; *black fantail pigeons*, 2 gs.; white *carriers*, 1 g.; three *Dorking chickens*, 1 g.; three white *Malay* chickens, 3 gs.; pair *China silver fowl*, 3 gs.; pair *golden game*, 3 gs.; *black Spanish*, £2 10s.; *Summer drake*, or Carolina, 3 gs.; couple *Summer ducks*, 5 gs.; three *bearded China* fowls, 10 gs.; couple

white Muscovy ducks, 30s.; white *swans*, 5 gs.; *Shanghae* cock, 5 gs.; pair *Guinea fowls*, 1 g.; pair *swan pheasants*, 5 gs.; *Cochin-China* cock and two hens, £15; *buff China* cock, 1 g.; basket *white doves*, 1 g. per pair; *cream doves*, 7s. 6d. per pair; *Virginian owl*, 5 gs.; cock and three hens *Cochin-China fowls*, £20; cock and two hens *bearded ditto*, 7 gs.; ditto *white bantams*, 2 gs.; couple dark *Muscovy ducks*, 1 g.; cock and hen *Malay fowls*, 2 gs.; cock and hen *Chinese silk fowls*, 2 gs.; cock and hen *white-face black Spanish*, 2 gs.; cock and two hens *bearded China*, 4 gs.; cock and hen *Cochin-China*, 2 gs.; cock and four hens *Creoles*, £3 10s.; *silver-laced bantam*, 5 gs.; cock *Chinese silk fowl*, 1 g.; pair of *teal* (ducks), 1 g.; *Malay fowls*, £5; couple *decoy ducks*, 1 g.; *white-crested black Poland fowls*, 2 gs.; cock and two hens *black bantams*, 2 gs.; *silver-laced ditto*, 2 gs.; five pens *China fowl chickens*, from 30s. to 3 gs.; ditto bearded, 30s.; pair *gold bantams*, 1 g.; pair *silver bantams*, 1 g.; ditto, 1 g.; *Jacobin pigeons*, 7s. 6d.; *Virginian horned owl*, 5 gs; a pair of *hare rabbits*, 1 g.; pair *Spanish ditto*, 1 g.; fine buck *Spanish rabbit*, 1 g.; and a quantity of *Guinea pigs*, 5s. per pair.

At this season for *budding* we readily insert the following communication from Mr. Foulstone, of Sheffield, and having tried his little *budding facilitator*, which in its case is easily carried in the waistcoat pocket, we can recommend it strongly to our readers.

"I beg to submit to your notice *a budding instrument*, which I think is well adapted for preparing and inserting buds. For several years I have been fond of budding roses, but I have been frequently disappointed in my buds not growing, although, to all appearance, they have taken well, but have made no shoots. I attribute the failure to the heart of the bud having been removed in cleaning out the wood. To avoid this, I have contrived this instrument, which I use as follows:—When I have taken off the bud, I take the instrument in my right hand, holding it by putting my fore-finger through the ring, and my thumb upon the hollow at the bottom of the long gauge. I hold the bud in my left hand betwixt my thumb and fingers; I then clean out the wood by passing the instrument betwixt it and the bark, thus scooping it out sooner than with the point of a knife, and it is not so liable to tear out the bud. After I have made the cut I raise the bark at the top with the point of my knife, in order to admit the point of the instrument; I then press it down the cut, and in this way the bark is raised much better than by an ivory budder, and it is less liable to get bruised. While the instrument is thus inserted, I have my bud prepared, and slide it down the groove; the instrument may then be taken out, and the bud will be fixed. Whilst tying in the bud, the instrument may be held in the left hand, by putting the little finger through the ring, and allowing the small gauge to be outside, while the large one will be across the bottom of the fingers, and will not be at all inconvenient. In this way the operation may be performed much quicker than by the ordinary method, and I think with much more certainty of the buds growing.

"The instrument being made of nickel silver, I think much superior to steel, as it is not liable to *corrode*, and therefore will not require so much care in keeping clean."

This last-mentioned fact is of more importance than we usually consider. Either the Tannin or Gallic acid contained in all barks invariably strikes a black colour—that is, forms a salt of iron—with the blade of a steel budding instrument; and the greater the amount of the blackness, or salt formed, the greater is the danger that the operation will fail.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Allendale, Sept. 11th. (*Secs.*, G. Dickinson and G. J. French.)
Bath, July 29th, Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)
Bridgewater, Sept. 22. (*Secs.*, Mr. J. Leaker and Mr. J. Hayward.)
Brigg, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
Bristol Agriculturyl, December 7th, 8th, and 9th. (*Sec.* James Marmont.)
Bury St. Edmunds, July 30 (Picotees); Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
Caledonian (Inverleith Row), Edinburgh, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, Aug. 26.
Clapham, Sept. 11.
Colchester and East Essex, Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Derby, Aug. 4.
Durham, Sept. 8.
Forfarshire (Eastern), Sept. 15 (Arbroath).
Hampshire, Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hexham, Sept. 15, 16.
Hull, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), Sept. 9.
Lincoln, July 27, Sept. 14.
Liverpool, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), July 27, Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Maidstone. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), Sept. 10.
Newbury, Sept. 3.
North London, Nov. 23, Chrysanthemum.
Northampton, July 27, Carnation; Sept. 27, Dahlia.
Oxfordshire (Royal), July 29; Sept. 23. (*Secs.*, C. Tawney and W. Undershell, Esqrs.)
Peebleshire, Sept. 14th. (*Sec.*, J. Stirling.)
Ponteland (Newcastle-upon-Tyne), Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)
South Devon Botanical and Horticultural, Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, Aug. 6, Sept. 17.
Whitehaven, Sept. 17, Dahlias.

POULTRY SHOWS.

Birmingham and Midland Counties, 14th, 15th, 16th, and 17th December.
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).
Cornwall (Penzance), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)

† For seedlings only.

LATE MELONS.

So numerous are the subjects requiring, at least, a passing notice, which present themselves to a writer on gardening at the present period, that, seeing a whole book may not be written, it is difficult to know what to leave untouched. One important item in this gardening olio is the subject of the present paper.

There are those who, although they cannot carry out successfully the forcing of *very early* melons, can manage very well to produce a late crop, their frames or pits

being more at liberty; to such we offer some fragments of advice.

The Fly.—Of all the enemies of melon culture this is the greatest; and he who would excel must bear in mind the saying of Cato on a greater subject—"It must be destroyed." Nothing short of extermination must be thought of. Now, this is not a difficult or expensive achievement; four ounces of shag tobacco will effect the purpose, for they will exterminate the green fly in any pit or frame.

We must repeat here, that unless the leaves of melon plants are healthy when the fruit is ripe, it is needless to expect luscious, deep-flushed, melting, and high-flavoured fruit. Thus the general culture of this much-esteemed and noble fruit becomes a question of leaf-culture.

Late melons are in blossom, or soon will be, and careful *setting*, or hand-impregnation, must be particularly attended to. This is even of more importance now than in spring, for then omissions of the kind may be repaired; but in July and August the season is too far advanced to admit of delay.

Stopping and *thinning*, too, is of increasing importance as the days shorten, which of course means light declining; and the fruit should be placed betimes on slate, or other sound material, to prevent contact with the soil, which ruins many a fine fruit.

Towards the end of August, the linings must be renewed, if they are in ordinary dung-beds, for *bottom-heat* will become a most important affair; no success can be hoped for with a less bottom warmth than 75°; if 80°, so much the better. This bottom-heat not only sustains a continuous root-action, but causes the soil to evaporate freely, or, in other words, to keep in a mellow condition: melons being exceedingly adverse to any stagnation. A lively root-action is the best preventive of the insect tribes, which always attack those plants most which have endured some check, or acquired a degree of torpidity.

Watering will scarcely be needed, if one pretty liberal one be given when the crop is as large as bantam's eggs; and this should be tepid liquid-manure, poured carefully between the stems, so as to effect the desired end without damping the whole of the surface of the soil. Nevertheless, although very moderate root-watering is requisite, the syringe should be applied most evenings just before closing, yet in a gentle dew, so as by no means to wet the soil, and, indeed, such as will dry off betimes the next morning.

A liberal *ventilation* is of the utmost importance; and here exists another reason why strong linings, or some equivalent, should be had recourse to. The ventilation will of course much lower the internal warmth of the frames or pits, and such would soon prove prejudicial, unless an artificial heat be well sustained. The interior air-warmth should, on no occasion, be allowed to descend below 60°; indeed, in the absence of solar heat, should generally range from 65° to 70°, allowing a rise to 90° maximum in sunshine occasionally. However, there is no sustaining any fixed point; much depends on the weather; and we would, on all occasions, close as early in the afternoon as may be deemed safe, using the highest amount of ventilation in the mornings, and indulging in the highest temperatures from 3 to 6 p.m. These directions are intended to apply through the swelling period; as soon as any of the fruit show signs of ripening, a lower temperature through night and day ventilation may be observed,—say from 60° to 65°; this will be found to add quality to the fruit, for there is nothing like slow ripening.

Another point of consideration is to pick away constantly all *waste blossoms*, whether male or female, especially late in the summer. Such nestling below the foliage rot and produce miasma of much injury, tending to the production of canker and gangrenous indications. All decayed, or *decaying leaves*, too, should be removed; and as the removal of such is not always a safe procedure; inasmuch, as in the event of damp and cold weather supervening, rot is apt to be engendered, means must be provided to arrest such consequences. As far as our experience goes, the best preventive is a powder composed of equal parts quicklime and charcoal dust; and whenever any portion of a leaf shows symptoms of rot, we apply a little hillock of the compost over and around the suspicious portions. A piece of broken glass or slate, placed slightly inclined to sustain the dressing, will keep it in its place.

The careful *training* of melons, from the time the leading shoots extend, is a point of more importance than some may imagine. Confusion must be studiously avoided, and it is really necessary to go over them at least twice a week. They thus consume much labour, or rather occupy much time in the aggregate; and this is, indeed, the chief cause why so many failures occur. Like good peach culture, a reason should exist for every shoot; all besides those really requisite are robbers of the system of the plant; and not merely so, but diverters of the juices from those portions containing the crop.

It may be well to name, also, that melons seldom swell so fine near to the main stem as they do farther off: those blossoms, therefore, which are produced within six or eight inches of the collar, should invariably be pinched off. Such, too, are generally produced in a premature way; that is to say, before the plants have laid up a stock of accretive matter, the consequence of several weeks elaborations. Like the animal system, in most respects, is that of plants, especially fruits; a proper foundation must be laid in the parent before beneficial reproduction can take place, and this of necessity occupies a given time.

In *setting* melons, it is a capital plan to use small sticks, a bundle of which may lie in one corner of the frame; one of these may be stuck in as a signal to every blossom that is set in the earlier stages; this enables the cultivator speedily to "take stock" at any time; and, as soon as the fruit is swelling freely, the point of the stick may be broken, or any other trifling signal adopted. Thus will the number of set fruit be readily ascertained, and as soon as the desired number is swelling off, the remainder may be kept pruned away.

As to the *number* each plant will bear, that is a question to be decided by the area of the frame, or pit, and the amount of good soil. The larger the glass surface, the more room for extension; and the greater the latter, the more liberal the amount of soil. This is all a question of light; for, as has been often stated by the various departmental writers in this work, light is the *primum mobile* in all gardening affairs. The more of well-developed and healthy leaf surface that can be exposed to the light, the greater the chances of full crops of high-flavoured fruit, and *vice versa*, other accessories being present.

We think, that for frame culture, the best plan is to train two leading shoots from each plant, two plants in a hillock, and to persist in securing a crop from these two however adverse things may appear. Thus, in a single "light," containing two plants, and measuring 5 ft. by 4 ft., we should only expect four first-rate fruits; or, if in a needy humour, six to eight; all this dependant on the style and character required in the produce. This, it will be seen, is either one to a branch or leader, or two, as the case may be. If any one seeks *exhibition fruit*, he must only allow two to a plant under such circumstances. But come we to a huge pit, each light it may be 8 ft. or 9 ft. by 5 ft., and the case is altered. Then we say, by all means expect eight fruits from each light. Whether they be *Beechwoods*, the *Bromham Hall*, the *Egyptian green-*

fleshed, Terry's, Snow's, or our *Hybrid Persians*, is a matter of taste with the grower: all we can say is, that the kind of green-flesh exhibited by Mr. Collinson of Exeter Hall, (an old, and worthy neighbour of ours,) at Chiswick, is, and has been for years of so superior a kind as to leave little to desire. All praise, however, to Mr. Snow, whose capital kind has surely a very close connexion with the Terry's, the Bromham's, the Collinson's, &c. R. Errington.

EXHIBITION AT THE GARDEN OF THE HORTICULTURAL SOCIETY.—July 10th.

This, the third and last exhibition of the season at the Chiswick Gardens, went off triumphantly. The day was fine; the tents were full of plants that could hardly be grown better; and, as always happens on a fine day in July, if there is any want of freshness or gaiety in the flowers, it is more than made up for by ladies' dresses, and here, at any rate, we are not tied down to the same things over and over again. If I had to report on this part of the exhibition, I should say, without hesitation, that the greatest improvement in it could be traced to the Belgian lace court in *The Crystal Palace*. Beyond these self-ventilating fabrics, the next greatest improvements were in the contrasts and in the combinations of the colours as we desire them in flower-gardens; but, indeed, the flowers, except those of many orchids, were as fresh as at any of the exhibitions; the Heaths, I think, were better than ever, and the Geraniums were quite as good as at any of the former shows. Stove plants, such as they exhibit, hold out much better than the greenhouse ones, and here you would see the *Allamandas*, the *Ixoras*, the *Clerodendrons*, the *Vincas*, and the *Dipladenias*, as two to one of greenhouse plants, except, perhaps, the *Leschenaultias*, the *Polygalas*, and the different everlastings, as *Phænocoma* and *Aphelexis*. In orchids there were no great novelties, and many of the plants looked anything but comfortable. The truth is, we had such a sudden and very unnatural change in the weather from the Sunday before the show, which lasted all the week, that to name blankets, counterpanes, or curtains, was enough to induce blisters; and the Orchids, which delight in a damp, uniform temperature at this season, were put out of their way more than hardier plants, while the Heaths shone as if this roasting weather had come on purpose to brush them on for the show. Fuchsias, after all, are not to be put down by the compass or carpenter's rule. We had here several collections of them, and some grown on opposite principles, and the effect of both equally good. That is, some were grown, and most beautifully too, on old stems or standards, after the manner of standard roses, and the heads were trained like so many umbrellas; these were exceedingly well-grown, trained, and flowered, and their novel shape attracted much attention; they belonged, I believe, to Mr. Salter, the celebrated introducer of French and other continental novelties to his nursery at Hammersmith. Others were bloomed from stems of last year's growth, closely pruned last winter or spring; and some from plants either struck last autumn, and kept growing in good heat all the winter, or cut down to the surface of the pots at the turn of the new year, or later, and only allowed to make one central stem, from which branches come out regularly, and at regular distances all the way up from the pot. Any of these three ways will do equally well for different kinds of Fuchsias, for there are some kinds which admit of being grown on either plan, and some which do much better from autumn cuttings or cut down plants. But the Norfolk plan, which I told of long ago, suits all the Fuchsias equally well, and is far better for conservatory and terrace-garden plants than this London way of growing them. Indeed, I never saw the very free-growing ones, with soft large leaves, in good bloom at any of the shows. *Don Gavonii* was the best representative of what I mean at this exhibition; and although the plant could not possibly be in better health, nor the flowers any larger, owing to the rage about rapid growing among London exhibitors, there was not more than one flower on that plant for every hundred that *might be*, if treated on the Norfolk system.

Now I am most anxious to turn the tide in favour of the *Fuchsias*, because I am quite sure there is not another family of plants in England so useful to amateurs and to country gardeners, and as anybody who can keep a sack of potatoes free from frost all the winter, will be able to save his Fuchsias all that time, there is no cause why everybody should not grow them, except one, and that is, the just prejudice raised against them at these very exhibitions, owing to the wrong and unnatural way of growing mere forests of shining leaves on long loose side branches, with small clusters of flowers at the extremities! Why you might often shoot woodcocks through some of the plants without shattering a single flower; then people cried out, "What is the use of growing *new fuchsias;* they are no good, they are so gauky; or they are such frights?" But a humming-bird, yea, a house-fly, could not pass through one part of any of Mr. Salter's Fuchsias umbrellas without displacing a leaf or a flower; and if his plants were branched from the pot, and ten or twelve feet high, and equally proportioned all round, a man might sit on horse-back on the other side of it and you could not see him, and the right criterion of a Fuchsia specimen might be this, that—*You could not see an elephant through the bush!* The white Fuchsias on this occasion were very rich indeed; there were nine kinds really good ones, but the two best, according to my notion, were *Pearl of England* and *Madame Sontag; Fair Rosamond* next; *Princess Elizabeth, Purity, Dr. Gross, Diadem of Flora* (large), and *Flavescens*, having a peculiar yellow tinge, were among the rest; and one called *Star* might be said to be intermediate between the red and the white ones. *Don Gavonii* is the largest red one I ever saw; and the best one for the flower-gardener at this exhibition was *Voltigeur*, because it was the nearest in growth or habit to the old *Gracilis*, the finest hedge-plant of the whole family where the soil is suitable.

This *Voltigeur* (pronounce it Volteshur) reflexes much, and the inside is an intense purplish blue, or bluish purple. Now let us make a fresh start with the Fuchsias another year. All the globes may be grown as at present, from cut down and then spring forcing, or from autumn cuttings grown on all the winter; all the rest we must try once more to flower from the old wood only, and give them no heat until the middle of March, unless they break early of their own accord and without help. Here we must bear in mind that my Norfolk friend, who takes off the first prizes with Fuchsias there, has proved that a Fuchsia is never fully up to the mark until the flowering shoots come from three-year old wood; therefore, a stem that is two years old now, or this autumn, will be a fit subject for this experiment next spring. This class must be kept rather dry all through the month of October, but not quite dry; this will cause them to go naturally and gradually to rest for the winter, without any hurt from early frost, which Fuchsias often have to stand against much to their hurt, when they are allowed to make a late growth. In November, the watering is to cease for the season, and before Christmas the plants are pruned, but they may be pruned as late as the end of January; and the pruning consists in taking off every morsel of the growth made this season, and last year's growth too, except where it is very strong; the principle being, that the shoot which is to bloom

must come direct from the body of the old wood, without the agency of a visible bud. There are other plants, no doubt, that would yield well under the same system, but experiments enough have not yet been tried to establish the fact. The Grape vine cannot be said to have proved either way, and it never will prove the question, because we know full well already, that this close pruning will all but kill a vine on some soils, while, on the other hand, it is the safest way to insure a healthy plant and a large crop on other soils. All this I have seen proved over and over with my own eyes. My friend, Mr. Salter, the great champion cucumber grower of England, would prune his vines until the rods were as smooth as whipcord; these bare rods would come clustered with full loaded bunches from the very bottom, all the way up, and on both sides, as regularly as you could set them by measurement; and not five miles off, others would lose two-thirds of their crop by the same process, and some more than that. Not so the Fuchsia, however; I never heard of one losing a flower by the closest pruning. The old soil must be kept to the roots of such Fuchsias all the winter, and until they break into leaf; then it is all shaken off, as they do for Geraniums, but *the main roots are never touched*, only the small fibrous ones, which are probably dead or nearly so. After potting, a close moist heat and a gentle bottom heat for six weeks would make a wonderful difference in their rapid growth, but it is not quite essential to success;—if the place is kept close for ten days or a fortnight to encourage root action, as the fruit-growers say, it will be enough. Thus, by pruning at different seasons, from October to February, and by potting from February to May, with a little forcing early in spring, country gardeners have them for all uses from May to November, and from July to September they are in prime order for the exhibitions.

Achimenes.—I was highly pleased with this, the next most useful tribe of easily-grown plants, after the Fuchsias, at this show. For some years, I know, from personal intercourse with the judges, they despaired of seeing a well-grown *Achimenes* produced for competition; and was it not for the collection at Kew, where they might be seen in beautiful bloom early in May, and at the Duke of Devonshire's, Chiswick Gardens, where Mr. Edmunds used to have whole rows of the blue *A. longiflora* ready for the July calls, country gardeners would go home laughing in their sleeves at the Londoners for their abortive attempts at cultivating this sportive family. When a society offers a five-guinea medal for so-and-so, and the judges cut the medal into five parts, giving only the fifth part to the exhibitor, he may rest assured that that part is only as much as to say—we wish to encourage the so-and-so as much as the society do, but you have only done a fifth part of what might have been done, and what we all do at home—here is a sprat for you this time, perhaps the herring will come next season. "The sprat to catch the herring" was never better exemplified than on this occasion with the Achimenes. Beautiful as the wild species are, and much as botanists feared the stains of mule blood on the character of the race, whatever may be said about the effects of free-trade on the flour of the wheat and barley, a free intercourse with the pollen-flower of the Achimenes has already done more to advance them into higher favour than the most sanguine of us anticipated five years ago; and here, too, judging from the hard names of the newer seedlings, the foreigners reap the advantages of this kind of intercourse. Our English *longiflora alba* is eclipsed by the French, or at least French-named, *Margaretta;* but this is a sad and most blundering name for so beautiful a flower, because it comes so near to the French way of pronouncing their name for the China aster. If you were to accost a lady of fashion, and say you had a *Margaretta Achimenes* to dispose of, her ladyship would ring the bell immediately to get disposed of one, whom she might well be excused for mistaking for a daft dealer. This may seem a trifle to those who know not the ways of the world; but I have known the question—"What's in a name?" answered by a fifty-pound note on the value of a seedling plant, and on both arms of the scales. *Margaretta* is a pure white Achimenes, and *longiflora alba* a bluish-white; *Warsewizii* is a charming seedling, the lighter blue of the *longiflora* breed, and the best grown and best trained plant in the exhibition, in a pot—nearly a yard through, and not more than ten inches high. *Klezii* is one of the most singular seedlings I remember to have seen; it is from *longiflora*. The flowers are, perhaps, larger, but in colour more like those of the Indian balsam, called Latifolia, than anything else—or between that and the colour of the Shrubland rose *Petunia*. One called *Patens major* is the richest in colour of all the family as here represented; *longiflora major* the finest blue. *Formosa*, and *Coccinea major* are the best of the old Coccinea breed. *Baumania hirsuta* looks like a Petunia on a dwarf plant of *Hirsuta;* it is the best of that class, and *Lipmannii* is of the breed of *Venusta*, with flowers twice the size; altogether they deserve the highest praise, and they also shew how desirable it is to go on crossing them. Get the high colour of the old *Coccinea* into these large flowers, and my word for it, you will soon get above the great geranium raisers.

From Sion House we had a fine specimen of *Nelumbium speciosum* in a tub of fresh water, with one large flower open, another in the bud, and a third scope or stalk, crowned with a seed-pod in the form of a truncated cone; the broad end uppermost, and filled with holes, in each of which a single seed or nut is found; these seeds are supposed to be the sacred beans of Pythagoras, and the soft stalks are used as food by the poor among the Chinese population. The *Nelumbiums* are easily known from the Water lilies, which they much resemble, by the shape of these seed-pods, by their having only one seed in every division or carpel of the seed-cone, or by other signs less easily seen or made out. We had also an immense *Humea elegans*, ten or twelve feet high, with a dozen main leaders, and twice as many side-flowering spikes; altogether making a noble specimen out of a very common plant.

Of other plants not often seen in public, we had *Curcuma cordata*, and *Roscöeana*; two canna-like dwarf plants; the first with coppery-red and yellow flowers, and the second having them of a bluish tint. *Æchmea fulgens*, a fine stove plant of the pine-apple or Bromelwort class, having the flower spike, the flower stalks or pedicels, as well as the buds and flowers themselves of a bright coral colour, and the tips of the flowers marked with blue, making altogether a most beautiful combination from such a rough looking plant. The beautiful *Vriesia speciosa* was there also, under a wrong name—*Tillandsia splendens;* it had only one spike of bloom, like the spike of some gladiolus just before the blossoms open, and all of a shining orange-scarlet; the plant is one of the most beautifully marked in the leaves of all the order—broad black bands across the green or ground colour. My neighbour, Mr. Jackson, of Kingston, grows this plant better than any one in England, and the secret is this—to keep the hollow of the leaves constantly full of soft water during the growing season, and to allow it a comparatively small pot, as the roots are very scanty and weak; but the rest I must put off till another day. D. Beaton.

JOTTINGS.

Sulphur.—This extremely hot weather has given the red spider a chance under circumstances wherein he has otherwise scarcely ever showed himself. I have

applied, for the eradication of this evil, the hydro-sulphate of lime, which M. Grison uses for the vine mildew. It is somewhat premature to speak confidently, but the little practice I have had with it leads me to believe that it will be effectual in *doing* for the red spider, more so than any other application of sulphur when blended with a liquid. I do not think I shall give up smearing pipes and flues in hothouses with sulphur, but then what would be the use of it at periods when fire was not wanted. As a preventive against mildew and insects, the mixture will be found most important. I made it exactly as recommended last week—one pound of sulphur to an equal volume of quick-lime, intimately mixed, then blended with five pints of water, kept stirred, boiled ten minutes, then allowed to settle, the clear liquid poured off, and to every pint of this add a hundred pints of clear water, and syringe with it directly. In the open air, with vines and peaches, I should use the mixture of this strength, and that is far from being weak; for plants of all sorts, even for vines and peaches in-doors, I would recommend a fourth more water; and for delicate plants I would prefer double the quantity of water—that is, two hundred pints to the pint of clear liquid. Those who imagine that at this strength they might as well use common water, have only to hold the moisture to their nose, and let a few drops be deposited on their tongue, to find out the mistake. I presume we shall all have reason to thank M. Grison for his simple mode of getting the strength of sulphur into water. I found such a strong residuum after pouring off the clear liquid, that I boiled it over again, and used it the same way as the first, but with only half the quantity of water—namely, fifty pints of water to the pint of liquid.

Another word or two about *burning sulphur* in houses and pits. Thus used it is a good servant, but a mercilessly bad master. As previously shown, if ever it actually burns, it will kill everything green, as well as insects. The detailing a misfortune is never without its use, and may often do as much good, in the way of a *beware*, as detailing the most successful practice for imitation. Now, I have had great experience in burning sulphur, and yet I got caught the other day with a collection of achimenes, and, what is worse than all, I can form no definite idea how the sulphur got to them. A pit is divided into two divisions. The last thing in one was British Queen strawberries, and, owing to the extreme heat, the red spider got on them. When removed, before filling with other things, it was decided to fumigate with sulphur; and, that time should be gained, it was done during the day, the lights fitting so close that even the smell was not perceived outside. The other half, separated by a close brick wall, contained the achimenes, and not even the opening of a pin-hole could be discerned: the sense of smell was also put in requisition, and all was right. But the next day, the achimenes next the strawberry division were either done for, or rendered so unsightly as to deprive them of ornamenting properties until fresh growth was formed. Now, I had burned sulphur in these pits often when one was filled with plants, and never had the semblance of an accident. No questioning will enable me to unravel the matter. That ill-doer "*nobody*" had unquestionably been there. The matter will very likely come out some day. My own impression is, that the lights over the achimenes had for some purpose been slid down, or tilted on the side next the strawberry division, and that some youth, with inquisitiveness largely developed, had lifted the light nearest the division to ascertain what the white, wreathing smoke inside could mean, and thus allowed a volume of the noxious vapour to touch the achimenes. It will be seen, therefore, that great caution must always be used. I may also mention, that strong fumes from hot-water pipes, when daubed with sulphur, tell very soon upon the achimenes tribe. The most sensitive things I have found in this respect are some of the finer-leaved adiantums. When it is necessary to fume a house from the pipes, such plants should be previously removed.

Mulberry-coloured Fancy Pelargoniums, such as Statuiski.—Who can account for taste. Our good friend, Mr. Beaton, says, "he sees plainer than ever why ladies call them 'such frights,' and that they look like half-drowned witches, &c.?" Now, without giving an opinion of my own, this name, *Statuiski* has already been inscribed in a number of ladies note books, this season, in my presence, and I have scarcely noticed one that passed without stopping to admire it. The plant, however, was large, some three feet in height, and when at its best, better than four feet in diameter, and it stood beside a *Queen Victoria* quite as large. The darks themselves might give us the *blues*, and the lights give a tendency to the *yellows*, but when contrasted, the beauty of both is enhanced. My object, however, in alluding to *Statuiski*, is not so much to defend him from our friend's criticism, as to tell of two good properties he has, namely, that he will bloom all the summer, in a box or bed, out-of-doors; and, secondly, that he is almost unrivalled for continuous blooming in a pot. The plant referred to has been an object of great beauty for nearly four months.

Preparing Pelargoniums for cutting-down.—"How miserable these geraniums look, Mr. F. Why my own can beat these hollow." The plants referred to were standing right in the sun. They had received no water for nearly a fortnight. Any moisture they could get must have been absorbed from the atmosphere, and from the soil or gravel on which the plants stood, and yet when these plants were cut down, they will break more regularly and strongly, and the cuttings will strike better, and make healthier plants, than if the plants had been coddled, and regularly watered. The perspiring and elaborating influences to which they were exposed rendered their shoots firm, and the juices they contained highly organized. And yet, people who keep their geraniums in a shady place, with their stems full of watery matter, find that their fine succulent green shoots break anywhere but where wanted, and wonder accordingly. Let the stems be well ripened, and neither plants nor cuttings will require half the care afterwards.

Shading.—And who has not wanted it during the last few weeks? Every mode has its recommendations; at some of our chief nurseries many things are tried. "We must have this," says one; "we cannot do without that," says another; "the plants will be scorched without them," says a third;—and it is all very well to have nice shading of calico, and bunting, and oiled cloth, and Nottingham lace, if you can get them; but even then this very advantage may constitute a disadvantage. They will at times be left on too long, or by shading all the house you shade something that you cannot give too much light to. I have no shading cloths at all; where a temporary shade is wanted I use a little whitening in water, and almost as quickly as you can let a canvass blind down. For a more lengthened purpose, and a subdued light like that obtained by Hartley's patent glass, I as yet find nothing equal to double size, heated in a pot, and drawn over the glass when hot. When the shade is wanted to be abiding and dense, a little whitening may be mixed with the *size*. R. Fish.

FLORISTS' FLOWERS AT CHISWICK.

July 10th.

The *Pelargoniums* here were the grand attraction of the day; they were never shown in better condition. This favourite flower is now cultivated to such an

extent, and so successfully, that it seems hopeless to look forward to any improvement hereafter; the only improvement that appears to us as feasible, is a better selection of kinds, for it is evident, from the few we have selected as superior varieties, that there must be a large number of very middling ones exhibited. It is quite certain, however, that a considerable importance must be allowed to culture; some good sorts were so indifferently grown that they lost their character in one stand, but in the very next to it were so well grown that a stranger to them would have thought them quite different from each; therefore, we would advise, first, the selecting all such as we have named, and then carefully studying the characters of the rest before discarding them.

On this occasion we added to our list of first-rate kinds the following:—*Mochanna* (Hoyle's); a large, well-formed flower; good truss, and free bloomer; upper petals, very dark; lower petals, rosy blush, with a pure white eye. *May Queen;* a very gay flower, of good properties; form flat, and nearly circular; the upper petals have a dark blotch near the eye, shading off outwards into a fiery carmine, edged with white; lower petals, a lovely, delicate pink; eye, large, and of the purest white; a very striking variety. *Peerless;* the whole of the flower is of a bright clear rose, excepting a small dark spot on each of the upper petals; it is a very distinct, excellent variety. *Christabel;* an old variety, but shown here in fine order; flowers generally of a light colour; form excellent. *Old Story;* a striking light variety, with an odd name; form good. *Corinne;* the shade on this beautiful flower is of the most delicate light purple imaginable; quite a pet in its way; form good; and a most abundant bloomer. *Lord Stanley;* this is also a beautiful shaded variety, almost approaching to a blue cast.

Fancy Varieties.—*Beauté Belleperchés;* flowers and raceme very large; upper petals nearly black; lower, white, with dark blotches; a striking, fine variety. *Fairy Queen;* good trusser, with flowers of the darkest rose, shaded with crimson. *Lady of the Lake;* a kind the principal characteristic of which is the veins that run through the colour. *Cabiaris* is also a distinctly striped one; and *Duchess d'Aumale*, a charming variety, with deep rosy petals, deeply suffused with crimson. These are all distinct, desirable kinds, well worthy of being added to any collection.

Cut Roses were the next most attractive feature of the exhibition; but, as might be expected, the hot day soon tarnished their brightness. We noted the following as the best—*Whites:* Madame Zoutman, Countess de Lacepede, Madame Hardy, Lamarque, Triumph de Bague, Madame Plantier, Blanche Fleur, and Madame Lignes. In *Dark Roses* the following were excellent: Géant des Batailles, Blairii No. 2, Souchet, Du Petite Thouars, Ohl, Lady Fitzharris, Vandieul, Dr. Marx, Barrone Hallez, Gen. Lamarque, and Paul Joseph. *Roses in various shades:* Coup d'Hebe, Pius Ninth, Brennus, Jaques Lafitte, Robin Hood, Wm. Jesse, Mrs. Elliott, Gen. Lamoricière, Gen. Jacquemont, and Chénédole. *Sulphur*, more or less yellow in the centre: Devoniensis, Cloth of Gold, Sofrano, Narcissus, Solfaterre, Niphetos, Eliza Sauvage, Smith, Jaune, Madame Despres, Clara Wendall, and La Pactole. *Pale blush:* Duchess of Devonshire, Devoniensis, Niphetos, Celestial, Eugene Desgaches, Gen. Negrier, Madame Nerara, and Pierre St. Cyr. The only really yellow roses present were, Persian Yellow, one flower of the Cloth of Gold, and Viscountess des Cazes.

In Pinks we noted, as being superior, Sir Joseph Paxton, Lord Valentine, President, Hon. Mrs. Herbert, Criterion (this was the best), Sarah was the next best.

T. Appleby.

ROSE CULTURE.

(*Continued from page* 230.)

Raising new Varieties from Seed. — The rose-growers of this country are very much behind our continental neighbours in this branch of rose culture. All, or nearly all, of our best roses have been originated chiefly in France, as their names show—Coup d'Hebe, Géant des Batailles, Paul Ricaut, Mossie Partout, and a host of others, whose names all show their French origin. Several good and standard kinds have, it is true, been raised in this country, such for instance as Moss Laneii, Duchess of Sutherland, Blairii, Duke of Devonshire, and a few others. We consider the circumstance of so few good roses being raised in this country, a slight stigma upon our (in other flowers) enterprising and successful florists. Perhaps one of the causes may be, the time that it takes to bloom them. If grown on their own roots it may take from three to five years before their merits can be ascertained; but surely this is not taxing the patience of the florist much; and even that time may be shortened greatly by budding any promising seedlings upon some other stock. For it is well known, that seedling apples and pears bloom and bear fruit much earlier upon older trees, if they are worked upon them. This has been repeatedly proved by T. Andrew Knight, Esq., and other diligent raisers of new fruits; and the argument in regard to seedling roses, is that they will flower, which is a preparatory step to producing fruit much sooner, if they are budded upon any kind of stock, or even upon trees already bearing roses. To save room, three or four, or even more, different seedlings might be budded upon one rose-bush; such as are not good flowers should be cut away as soon as they have bloomed. Then, again, if the raising of seedling roses be a work requiring some amount of patience and perseverance, let it be remembered that the time required to bloom a seedling rose, even on its own roots, is nothing compared with some other flowers. The tulip, for instance, which, upon an average, takes six years from the sowing of the seed to the blooming of the seedlings, yet in this flower, we are proud to say, the English florists far surpass their continental rivals, with all their fine climate and other appliances to boot.

This being the undeniable fact, surely we are not asking too much of our florists to turn their attention to improving our home-raised varieties of this universally-allowed queen of flowers. To accomplish this desirable purpose, the following points should be attended to:—

1. To save seeds from the best formed flowers, with fine foliage, free habit of growth, and abundant bloom.
2. To save seed from such as bloom early enough to ripen it thoroughly.
3. To gather the seed as soon as it is ripe, cleanse it from the pulp, and keep it perfectly dry, but cool, till the sowing season arrives.
4. Sow this choice and carefully chosen seed in shallow pans early in spring, and place them either upon a shelf in a warm greenhouse, or upon a gentle hotbed.
5. As soon as the seedlings are grown a few inches high, and the weather will permit, plant them out in a nursery bed in a carefully prepared soil, neither too light nor too heavy.
6. and lastly. Transplant them the following autumn, where they are either to bloom or to yield buds the following season.

We feel the matter of sufficient importance to dilate briefly upon each of these points of growing seedling roses.

Saving Seed.—The roses should be diligently marked that are intended to seed. This should be no chance work; the seed should not be saved indiscriminately. The perfectly-double flower will not, it is quite true, yield seed, or, in other words, produce fruit within

which is the seed of a tree, because all the stamens are converted into floral leaves. It is, therefore, only from the partially-double flowers that seed may be looked for; but it generally happens, that on a rose-bush that generally produces double, perfectly-double, flowers there are some few that have some pollen-bearing stamens with perfect stigmas on them. From such save seed, cutting off all the barren flowers. Here, in this stage, is an opportunity of hybridizing; that is, by dusting the stigma of some fine variety with a pollen of some other variety that possesses a quality superior to the one operated upon. For instance, one may have a rich, clean colour, but is deficient in substance or form; or, it may be, the centre petals are deficient in number to form a fine double flower. Though the diligent bee, and other insects, may partially perform this, yet that is an uncertain way of hybridizing, and of course done without judgment or discretion; for their instinct does not teach them to carry the most suitable pollen to answer the purposes of the hybridizer. Instead of that, they mar the intended effect, and should be prevented from doing so by covering each flower operated upon by the hopeful florist. This hybridizing is well worthy of careful attention, for it is by it, that truly wonderful effects are accomplished. We have dwelt rather long upon this point of hybridization, because we fear our non-success has arisen chiefly from an indiscriminate, shall we say, careless, way of letting them take their chance, and saving seed from every kind good or bad. This is very wrong in the case of the rose, as it is in other florists' flowers, and must lead to disappointment and discouragement.

T Appleby.

(*To be continued.*)

REMINISCENCES OF THE SEASON.

There is nothing at which human nature seems more at feud with than the weather; as Swift justly observes, "it is always either too hot or too cold; too much wet or too little;" or, when a combination of these extremes does take place, we are told of "blight," impure atmosphere, and I know not what besides. Now, we gardeners are no more exempt from such frailties than are other classes—we find fault with all sorts of weather. A continuation of dull moist weather, we say, is at variance with our fruit being well-flavoured; while bright hot sunshine is fatal to newly planted-out things: so that we, like the rest of the world, are ever grumbling; and, according to the creed of some, each succeeding season, or even each succeeding day, is worse than any before it. Fortunately, the conventional usages of society have placed a heavy tax (in kind) on such complaints; so that before each individual one receives the sanction of public sympathy, a considerable reduction in its general features takes place. There is nothing, perhaps, more just than this, as we are all too prone to find fault with the means whereby nature checks (or it may be unduly hastens) the progress of some of her operations, while we are blind to the benefits that other things are at the same time receiving from the self-same weather we have been inveighing against. Now that the present season has not escaped its full share of abuse is apparent to every one; the early part of it, commencing when vegetation is wakening into life, was unusually dry; some people said it was too cold also; but we will not coincide with that, this dry season continued uninterrupted until the middle of May, when some slight showers became the prelude to much heavier rain, which increased in the early part of June, so as to occasion floods in the low lands, while dull, showery weather continued until near the end of the month; it gradually dried up, and the sun, in like proportion, asserted his sway by an equally gradual increase of his daily visitation, until the first week of July found us complaining of the most "extraordinarily hot weather we ever remembered." Certainly, the transition between dull and wet weather to unclouded sunshine was shorter than is usual, and may in some cases have been hurtful to plants in a highly artificial condition; but most outdoor crops hailed the change with delight, and of course a corresponding advance in their position took place, the same as occurred when we had the fine rains at the end of May, only the progress in the two cases differ in their import, the one being in the enlargement of the vegetable portion of the plant, the other hastening its fructification, or period of coming into profit. Grumblers tell us that both these extremes of weather are useful in their way, but that we have too much of them. It is unnecessary here to enter into a justification of that Providence which dispenses to us such weather as is best for our collective wants; let us see how much real good, and even harm (according to the opinion to some) the present season is charged with.

In the first place, it is admitted by all that the dry spring rendered the ground in better condition to receive the various plants and seeds committed to it than has been observed for many years. In fact, we seldom knew a hard winter mellow the soil so well, and its being so at an earlier period than usual; the sowing of seeds and other operations were (or might have been) done much sooner than usual. Where this was accomplished, the evil effects of the continued dryness was counter acted, so that it was only those crops which were sown late in the spring that were retarded by the drought; but then our grumblers will be pointing to the long continued north-east wind, and its baneful effects on vegetation. True, we cannot deny that its withering influence was hurtful to living plants by withdrawing more of their juice than they could well spare, without affording them anything invigorating in return; still, it must be confessed, in so far as acting the part of a fertilizer on the ground, it was equally as good as a severe frost, and more so, perhaps, because its influence by continuance extends deeper. We may, therefore, take it as granted, that notwithstanding the supposed want of sunshine, the ground was in better order the beginning of May than is usual at that time; but as the month advanced with no rain of any amount, deep and loud were the complaints, until by and by we were blessed with more abundant showers, and these gradually softening into settled wet weather. This gradual change was no doubt wisely ordained:—Supposing a heavy fall of rain had come all at once moistening the earth to the full depth required by vegetation, would the latter have benefited to the full extent by it? Certainly not. The withering influence of the east winds had so sealed up the tissue of the plant, that it could not at once have adapted itself to the profusion by which it would have been so suddenly surrounded, as it is reasonable to suppose it would have suffered in a similar way to the human or brute creation if suddenly removed from a state of starvation to one of super-abundance, and the reasoning powers forbidden to act. Much better regulated therefore, was that gradual state of transition by which the plant was enabled to prepare itself for the change.

Now, we ought to copy this in our forcing, and other operations of an artificial character; and, though we have little hopes of balancing the various elements with that degree of nicety so essential to the success which nature alone claims as hers, yet we ought to make the difference as small as possible.

But, continuing our notes on the season, we may observe, all accounts agree that the quantity of rain which fell in June exceeded the average of that and almost all other months in the year; and so completely was the ground saturated that it was reported, springs,

&c., flowed with an increased supply, while, of course, brooks, streams, ponds, &c., were all filled to the brim; and towards the end of the month, reports got abroad that the ground was chilly, cold—crops late—potato disease, like a pestilence, spreading—beans blighted—wheat mildewed—and I do not know how many other diseases appearing. However, by-and-by, the monarch of the day asserted his supremacy, and for a time, dividing his authority with the clouds which impeded his track, he quickly shook off those necessary yet troublesome opponents, and towards the end of the first week in July shone forth in all his glory, looking almost as if his brightness had increased with his concealment, and warming the earth by his powerful influence, soon began to call up from below some of that moisture which lies in store to replace the loss of that near the surface, which is carried off by evaporation, the requirements of plants, and other causes. So well, and so continued has this been going on, that we apprehend shortly to hear of plants suffering whose roots do not extend so deep as to reach the store of moisture beyond the sun's immediate action. Now, though like the rest of mankind, we are at times inclined to find fault with the caprice of the season, in so far as affects the welfare or otherwise of certain things, more especially our hobbies, yet we must all admit that the present one, though somewhat singular, has been on the whole favourable to the growth of most things. But we must defer further details on this head until another week. J. Robson.

BENEFIT CLUBS.

By the Editor of "The Cottage Lamp."

I am now going to write a little upon the subject of Benefit Clubs, which have appeared to me, since I have had some insight into the wants of the poor, to be most valuable means of assisting the industrious part of the population, and of providing for their sickness and old age. It seems to me, that by establishing and *properly* managing these clubs, we should do much towards forming the "model parish," which I have seen suggested, and which must be so difficult to effect even with the best and most zealous intentions.

In the beautiful memoir of that man of God, the late Rev. Legh Richmond, there is a long and interesting account of the three clubs he formed in his parish, which took in all the population, and were most beneficial in their effects. There was a club for men, one for women, and a third for young persons of both sexes below the age at which they could enter either of the other two. They were, of course, regulated by a system of rules drawn up by Mr. Richmond, who conducted them, and presided over them with holy watchfulness and care. *This*, let me strongly assert, is the grand cause of all good in a parish, for where the clergyman goes before his flock, leading, directing, instructing, and guarding them, all its institutions will flourish; because all are conducted, or *should be so*, with a single eye to the glory of God, and the good of souls; and when God is regarded in all we do, we have the only sure warrant for expecting that our works shall be blessed and established. The description Mr. Richmond's biographer gives of the meetings of these clubs is delightful indeed, and would form a valuable model for other parishes where such clubs are desired.

When a man has worked all his life for the support of his family, what can he lay by for sickness and old age? Supposing he could set apart one guinea in the year, what would that be when many years of helplessness, sickness, and want came upon him? It would soon be gone, when others were dependant upon him, and when a doctor's bill came to be discharged? No! I am persuaded, that with the very best endeavours, a poor labourer can do nothing for himself or family, when age or sickness comes. But when he is the member of a Benefit Club, his monthly payment is a little store for the days of trial. We know "how good and how pleasant it is for brethren to dwell together in unity;" and, even in a worldly sense, we may see the advantages arising to all from banding together for mutual support and assistance. The subscriptions form a fund, frequently aided by honorary members, which enables all who need to receive far more, and for a longer time, than they could possibly do by their own single-handed endeavours. The subscription monthly is small—the benefit eventually is great.

In our own parish, where things are managed any how, I have clearly seen the good of benefit clubs. Two have been established for a great many years. One is a life club; the other is only for a sort of running lease of seven years. This kind should never be permitted for an instant. Every seven years it breaks up, the funds are divided equally, the members most frequently eat and drink away their share; they then form again for another seven years, and any aged, or confirmed sick member is rejected. This is altogether bad; and I hope ours is the only club of this kind in England.

The Life Club is a great blessing indeed to all who belong to it, although it is very differently managed to those in Mr. Richmond's happy parish. The annual meeting takes place at a public house; it is not presided over by the shepherd of the sheep, and of course, under such circumstances, sobriety and religious observances are very little indeed considered. Yet even so, the members reap worldly advantage from it. The monthly subscription is one shilling and fourpence; this intitles each member, in case of sickness, to medical advice; and an allowance of seven shillings a week for nine months, if illness continues so long. Should the member continue ill beyond that time, the allowance is reduced to three and sixpence a week, as long as the illness lasts. Now what a provision this is, and how cheaply bought by the care and self-denial needed to lay by the monthly payment!

I remember being particularly struck by the good effects of this club, in the case of one poor man, in whom we all took great interest, from the steadiness of his character, and his having worked for us for many years. Consumption was God's appointed means of calling him to judgment, and he lingered for many months, when he could no longer fight with disease, and struggle to earn his own bread.

"What should I do without my club money?" he often said, during his long decline; "parish pay would do little for me now; but I thank God, He enabled me to pay up regularly, and now I find the good of it. Many people grumble at having to pay, pay, pay, every month, without getting any good; but when they *do* come to be sick like me, they'll never grumble again."

The want and distress that many endure, who belong to no club, makes one very anxious to promote, as far as possible, such parochial institutions; and where gentlemen have the heart *and* the purse, they might do more to lessen the poor-rates, thin the union, and benefit their humble neighbours in this way, than by the strictest economy in the management of the parish funds. I know that in many, very many cases, labourers have not the power of putting by even the small sum required for this fund; where wages are low, and children numerous, it cannot, very frequently, be done; but there are, in most parishes, persons whose means might do much, if their hearts were set aright, and some of the industrious, but very poor, might be assisted by them, according to their ability, to belong to a club, and thereby provide for them when help is of greater consequence than now.

I would strongly impress upon my readers the immense importance of having these parochial institutions conducted in a godly manner; nothing else can give them strength and blessing, and they may, by this means, be made to promote brotherly love, close union, and holiness, as well as worldly prosperity.

I should be very thankful if my feeble pen could at once rouse attention to this subject among those who love to benefit the poor. Do what we will for the labourer, we cannot otherwise provide for his decrepitude. The union, or a miserable pittance, is his certain portion, because no poor man can lay by enough for years, perhaps, of suffering; and if every clergyman would set on foot one or more clubs, according to the state of his flock, and obtain the assistance of his richer parishioners in their behalf, with the blessing

and help of the Lord, who "careth for the poor," and can give increase to every endeavour, made in His love and fear, it does appear to me that great good would result. We must not expect perfection in any thing here below, when the hearts of men "are deceitful and desperately wicked; who can know them?" but *great good* would surely be done, and if only one little portion of a parish was benefited, this would be a blessing; and by not despising "the day of small things," yet greater things might arise. Let me press upon the attention of my richer readers the subject of benefit clubs, supported by the shepherd of the flock, and conducted in a spirit boldly and decidedly religious.

THE VANISHED HEN.

"I DO'NT know what the endurance of the class AVES may be in general, though there may be many reasons for supposing them patient of hunger, or rather, provided against its injurious effects. Many more instances and illustrations of this property of birds will occur to the scientific ornithologist than to the mere unsophisticated admirer of the beauties and habits of this interesting class of animated nature. I would suggest the ostrich as an instance. I do not mean to assert that in its wild state it lives entirely upon the anchors, iron cables, rings, and bolts of stranded vessels; or that in its state of semi-domestication its food is necessarily cellar-keys; but its faculty of digesting iron is proverbial; the human *auri sacra fames* not more so. And as Dame Nature is too economical to be lavish, abhorring waste of means to an end quite as much as a *vacuum*, we may not attribute to the ostrich a West Indian steam-boat provision of boilers and furnaces, which may reduce iron and steel to a nutritious pulp in the shortest possible time. In the absence of such hypothesis, the bird-camel must be considered as patient of hunger as the camel of the desert is of thirst. We might better say, for *hunger* and *thirst*, the absence of food and water. Having erected this dogma on a basis which I may call irrefragable, if not *ære perennius*, certainly as durable as iron, I proceed to an instance which came under my own observation respecting the endurance of abstinence by a unit of the class *Aves*, genus *Gallus*, variety *non-descript*.

It was a gladsome day for me and my sublimer help, when we approached our emancipation from a dingy lodging, and our bran-new little vicarage was almost ready to receive us. Besides, I was to take nearly thirty acres of glebe-land into my own hands at the same time. When I followed the first load of my *impedimenta*—rightly so called in this if in no other case, for they had impeded my motions in a room 1-32nd part of which was assigned to me as my dressing-room for above a-year-and-a-half—I beheld a cottager carrying to a sunny spot a little hen with a large batch, or clutch of newly-hatched chickens. The hen had a tinge of the golden pheasant, and a top-knot. She was pretty enough, with her large family, to awaken my sympathies, and to induce me to satisfy no common demand, or rather to gratify the cottager's burning lust of filthy lucre by an uncommon sacrifice of sixpences, as *item first* towards stocking my farm-yard. To this, sundry other specimens of the ovipositing and chicken-producing genus were soon added. It would be 'beside my subject,' as your logical and methodical folk would say, to tell you that due respect was had to the corollaries of eggs and chickens; need I name ham and bacon? but, as I make it a *Religio Clerici* to steal nothing from one topic to enrich another, I only allude in the most scrupulous manner to aught that might be deemed extraneous. Moreover, to wiredraw a narrative is a page-engrossing trick I especially detest and deprecate. *In medias res* is my failing, I might almost say. Well, my sole mammal, if you will except a dog or two, and three or four cats, was a horse; and this horse a mare. But my mammal wanted a warm bed the more, rather than the less, because she was solitary in a four-stalled stable. Straw was to be, and was, procured. It was deposited in an empty barn by the simple-operation of forking it in at the 'sheaf-hole' window. Now this empty barn and in-lay of straw are the very *res mediæ*, as a poor *Avis*, myself, and my readers, if any, are to know. For the present we will leave the straw there, or only go to it as it may be wanted.

My custom has always been, for now upwards of fifteen years, to go immediately after breakfast and with my own proper hands to feed my poultry. That goodly habit I have only very recently doffed in deference to a cunning Yankee, ycleped Micaiah Cock, whose feeding trough I have adopted. It is upon the principle of letting out corn from a half-inch opening at the bottom of a hopper, formed by two inclined boards and two ends. I don't much like it. Not that it does not answer well. Your birds are always secure of the power to feed themselves when, and as much as, they like. But they don't *much* run after me now. They look mighty independent, and as if they wondered "what master be com'd for, and what he be a wanting." To return from this agreeable and instructive episode on Micaiah Cock, his feeding troughs, it was till lately for many years my wont to feed my poultry every morning. At the date at which this narrative is laid, I went regularly down to my farm-yard for this purpose. One morning I called them together as usual, and found only five of my six hens. There was his imperious majesty, their sultan, and their downy pledges were there. I might call; hen sixth came not, answered not. I was stupified at my loss. I made many, various, cross, and coaxing, bitter, and beseeching inquiries. I suspected my servants of carelessness, or worse, and concealment, and all the world of the most heartless dishonesty. Every bag and every basket, that every man, woman, and child carried, did I regard with suspicion. I looked with a hard face at every mendicant, and an iron visage at every tramp. "Stolen hen" was written in every lineament of my countenance. I vehemently desired to make an *ante mortem* examination of all possible stomachs. Days and even *weeks* passed away; no thief was taken, no hen restored. The heap of straw, which we left in the barn, began to subside by daily use. "An thinks there be rattens i' barn, or summut," said my parish clerk and factotum. "Catch 'em, Willison," was my reply. But he was so urgent that I walked away, snatching up a big stick, offensive and defensive, with him to the barn. "An thinks an 'eered un," said factotum. "Well! I heard something. Is that a rat?" "'t be a rat, or fomart, an thinks." "Why, Willison, what a noise. Your rat, or fomart, or whatever it is, must be sadly asthmatic. What a croaking and wheezing!" "An ne'er 'eered un sa mich afore. Sal an rem-man (remove) stra'?" "I think you might as well, and then we shall cure the fellow of his complaints at once." So the straw was gradually and carefully removed by factotum. Self stood gasping with curiosity, and dogs *auribus erectis*. Now we approached the bottom; factotum pounced at something, and I should have made short work of it but for fear of hurting *him*. He had got it under his arms, and only a small layer of straw to remove. He drew it forth. The asthmatic rat or fomart was, as he shouted out, nought but (pronounce *nor-but*) "an'd *hin!*" And my poor hen it was. She was alive, but light as a feather, and weak as claret-and-water. She made an effort to sit up and gape a strange attempt at "How d'ye do?" The poor creature had happened to be in the barn, and under the sheaf window, and was buried in the aforesaid straw. She had laid there within two or three days of three weeks. She might have obtained a grain of corn out of the straw, but how had she done without anything to drink?

I supplied her immediately with warmed milk *ad libitum*. She drank as if she never meant to give over. Soon afterwards she had some nice warm pulpy food given her, of which she would then have eaten more than I deemed good for her case. She rapidly regained her plumpness, strength, and facetiousness, and was many times after that "in the straw," to our better supply and great satisfaction. "All's well that ends well;" so ends my veracious tale.

The MORAL is, that we ought never to throw straw into a barn till we have looked and ascertained that we are not burying a very useful specimen of a nondescript ovi-positress. She was a brown hen, somewhat black-pencilled; but nature had not thought her finished till she had been turned out into a storm of adhesive and unmelting snow."

R. G. S. B.

BLACK POLAND FOWLS.

HAVING for many years been a careful amateur breeder of black Poland fowls (with white crests), I beg to offer a few jottings as to their merits.

They have always been kept by myself in somewhat limited space, and although not possessing *any* superior advantages of situation, I have found them much better layers than any other variety with which I am acquainted (not even excepting the Cochin-China, of which I have long kept a very superior strain). The eggs are equal in size to those of ordinary poultry, and though not so large as the Spanish, are certainly of far *higher flavour;* and the statement in your number, for June 10, of "five hens laying 503 eggs, in eleven months," has been far exceeded by the Polands in my own stock. In respect of the flavour of the flesh, certainly none can be superior to the black Polands; whilst being roundly-built birds, having the merry-thought, wings, and breast *fully* developed, they outshine most of the larger varieties in which the *coarser* parts are most prominent; the latter being what is generally termed "leggy."

Your correspondent, Anster Bonn, asks—"Whether it is as difficult to rear perfect Polands, as light-buff Cochins, without speck, spangle, or pencilling of any other or darker colour?" I reply, certainly not; if you *commence* breeding with *perfectly-plumaged* stock.

I have always selected the best feathered to breed from; and now find it a very unusual occurrence to meet with an imperfect chicken, and their crests very far surpass in size those of former years, whilst, though breeding Cochins from *perfectly* buff birds (themselves being *bred* from light buffs), I have buff, pencilled, and even dark chickens.

The Poland chickens are not more difficult to raise than others (even when enclosed in aviaries; and I may here add, they may bear confinement well), and are certainly not so tender as the Spanish, Cochins, or the Hamburghs. It will be found, too, that the eggs of the Polands are almost universally productive, but after the fifth year, the cocks become quite useless for stock birds, though still very *superior* for "exhibition fowls."

The only drawback to Polands, is their non-sitting, which certainly causes extra trouble, but for profit, as laying birds and readiness of sale, I should be most happy to hear of *any* that can rival them; and though "miserable-enough-looking, in wet weather," after the first fine day, what other variety can be so unique and ornamental.

I enclose you my card, by which you will perceive how very successful my strain of fowls have proved themselves at the various local shows of poultry.—A SUBSCRIBER.

ROYAL AGRICULTURAL SOCIETY'S SHOW.

THE poultry exhibited at Lewes on the 14th, 15th, and 16th instant, were, with very few exceptions, not first-rate; but we must reserve a fuller notice of the show, and of the horticultural exhibition at the same place and time, until our next issue. The unavoidable absence of the Editor must be our apology for this, and for our correspondents' numerous questions remaining unanswered.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

ROSES (*Simplex*).—Long ago there was a class of roses called *Damask* Roses, and some of them produced flowers in the autumn, of which one, called *Lee's Perpetual*, was the best, and there is hardly a better one now. Roses, like dogs and horses, are distinguished by "breeds;" some of these "breeds" were crossed with *Lee's Perpetual*, and other perpetuals of the old *Damask;* and the offsprings from these crosses are now called cross perpetuals, or *Hybrid perpetuals.* Any one who knows the difference between a house-dog and an Arabian pony (donkey) may understand this section of the rose; but we should fail in the effort to make any one understand the "breeds" of roses from our descriptions. Hybrid perpetuals are hardy roses which bloom from May to October, according to the season, soil, and situation; among them are some of the best roses in the world, and some of the worst, and some of all degrees between. Of the best kinds we gave lists last winter, and also the best in every "breed;" for particular purposes and situations we must always repeat more or less from these lists, and add to them as new roses are proved. We should think the following HYBRID PERPETUALS would suit you very well, either as dwarfs or standards:—*Mrs. Elliot, Madame Laffay, William Jesse, Duchess of Sutherland, Barron Prevost, Geant des Batailles, Marquis Boulla, La Reine, Soliel d' Austerlitz,* and *Standard of Marengo.* The following HYBRID BOURBONS are among the very finest roses, but will not bloom beyond July:—*Charles Duval, Coupe d'Hebe, Paul Perras, Paul Ricaut,* and *Las Casas.* HYBRID CHINAS—*Chenedolle, Brennus, Beauty of Billiere, Fulgens, Margined Hip,* and *Triomphe d'Angus.*

RANUNCULUSES FROM ROME.—*Ladybird* informs us that she has "brought some ranunculus roots from Rome, and wishes to know if it is too late to put them in the ground?" "Ranunculuses," she adds, "are beautiful at Rome; and these brought over were all marked plants, and it would be a great pity to lose them. *Marigolds* are finer at Rome and larger than they ever are in England. In the Pope's garden they are magnificent, and quite dazzle the eye to look at them. They cultivate them with great care, and manure them highly, mulching them as we do dahlias. Treated in this way, they would make a very showy bed to match *Escholtzia.* An English gardener would soon make his fortune at Rome, if he could stand a *little* sun. Everything is in his favour,—soil, climate, and, from October till May, abundant custom from the English and other foreigners, for bouquets, and, in fact, all flowers cut or uncut, of which, as far as Camellias, Lilies of the Valley, Violets, Roses, Ranunculuses, &c., they have an abundant growing in the open ground nearly all winter. With glass what wonders might be achieved." The roots which "Ladybird" brought home from Rome, were those of "marked plants;" hence we understand that "Ladybird" had her choice flowers in a bed marked for removal as soon as the leaves were ripe and withered. The very same roots, in all likelihood, were just *marked* in England, or in Holland, and sent to Rome; but if they were quite ripe before leaving Rome, they can take no harm to the end of October, when they may be planted. If they were planted now they would be in full leaf before winter, and if it should be a hard one, it might injure them much.

PRUNING RIBES SANGUINEUM (*H. A. D.*).—Just after flowering is a good time to prune this Ribes, and again at this season some of the shoots ought to be thinned out where the plant grows too crowdedly.

FLOWER-BEDS (*Inquirer*).—Except what is interspersed in Mr. Loudon's different works, we do not know where to direct you for plans of flower-beds.

HYBRIDIZING.—*J. H. H.* wishes to know if a marriage can be contracted between a double red wallflower and a single red stock? If it can, what would be the produce? The union is not lawful, at least on this side of Gretna Green; but why not try it? More strange unions have been spoken of, if not suggested, by legal practitioners. The produce could not fail to please.

CANTUA DEPENDENS (*X. Y. Z.*).—This will not flower without a decided rest. It ought to be treated exactly like a fuchsia that is grown freely through spring and summer, and then kept dry and cool through winter. It should be almost without water during that season. The original plant at Messrs. Veitch's, of Exeter, is planted out against a south or north-east aspect, and is now covered with bloom-buds, and would no doubt do well in a similar situation in any part of Devon, or Cornwall, or even in the Isle of Wight.

PRESERVING ORCHID FLOWERS (*Coryanthes Macrantha*).—There are no flowers that travel more safely when cut, than many of the blooms of the orchids; but such as are naturally short lived on the plant are exceptions to the rule. *Sobralia, Coryanthes,* and *Stanhopea,* are examples of this exception. There is no means of overcoming this difficulty, excepting that of sending them in spirits, and then they lose their colours.

PAULOWNIA IMPERIALIS (*Queen Mab*).—By all means dress off the young shoots that have appeared on the stem. Your other question shall be answered as soon as we are in possession of the price of the plant you mention.

KILLING CATERPILLARS, &c. (*A Constant Reader*).—We are sorry that any one so generally correct as the writer you name should insert such nonsense in his work, as the alleged mode of killing caterpillars by boring a hole into the tree and filling it with sulphur!

CANDYING STRAWBERRIES (*Julia*).—Will some of our readers inform us, for our correspondent, how these are done and dried?

LAND OVER-LIMED (*A Subscriber from the Beginning*).—If a case of over-liming were ours, we should give the ground a slight dressing with Epsom salt before planting or sowing any crop, but after the digging. But we cannot think that the failure of your crops arises from the lime applied four years ago. Were they good before? Is the land heavy or light? Where was the soil to make your ground brought from? What is the depth of the soil you complain of; and what is its subsoil?

CANTUA DEPENDENS.—I. H. W. wishes to know where the *Cantua dependens* can be procured at the low rate mentioned by A. D., page 234 of the present volume of THE COTTAGE GARDENER. She has also observed the remarks in the same number on the *Tropæolum speciosum,* and begs to say she has a fine plant in full bloom against a south wall, planted there in May, 1851. It is many feet high, and festoons itself on the roses near, like the one described by E. M. The soil and situation are very different, being fibrous and boggy, admirably suited for American plants, in a cold part of Devonshire, not far from Dartmoor.—Perhaps some florist will send us an advertisement of cheap *Cantua dependens.*

BOOKS (*A Subscriber*).—Buy "Abercrombie's Pocket Journal," and "The Cottage Gardeners' Dictionary." The two together will cost you about ten shillings.

NAMES OF PLANTS (*Quidam*).—The single leaf *Campanula garganica;* the purplish flower, probably *Malva fragrans;* and the white one, *Pyrethrum Parthenium plenum.* (*Rev. R. M. Evans*). — *Gazania rigens,* or Large-flowered Gazania, a beautiful old greenhouse plant, deserving a place in every collection. The nettle-leaved plant (only one leaf!) is, we think, *Campanula alliariæfolia,* var. *macrophylla.* (*A Lady*).—*Orobunche elatior.* (*E. S.*).—*Deutzia scabra,* or Rough-leaved Deutzia. (*S. S.*).—No. 1, *Arum dracunculus,* or Carrion plant. No. 2, *Saxifraga sarmentosa,* or Thread-of-life plant; it is not quite hardy.

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WEEKLY CALENDAR.

M D	W D	JULY 29—AUGUST 4, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
29	TH	Trailing St. John's Wort flowers.	29.790 — 29.768	75—49	S.W.	03	21 a. 4	51 a. 7	2 8	12	6 8	211
30	F	White Hellebore flowers.	29.973 — 29.837	75—55	N.W.	52	23	59	3 11	13	6 6	212
31	S	Yellow Loosestrife flowers.	30.000 — 29.886	73—62	S.W.	01	24	48	rises.	☺	6 3	213
1	SUN	8 SUNDAY AFTER TRINITY.	29.847 — 29.830	78—62	N.W.	02	26	46	8 a 56	15	5 6	214
2	M	Middle Flea-bane flowers.	30.020 — 29.989	79—60	S.W.	—	27	45	9 18	16	5 56	215
3	TU	Gad-Fly lays eggs on horses.	30.066 — 30.033	78—54	S.W.	—	29	43	9 36	17	5 51	216
4	W	Musca mystacea seen.	30.170 — 30.102	81—57	E.	—	30	41	9 54	18	5 46	217

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 74.8° and 51.7° respectively. The greatest heat, 92°, occurred on the 1st in 1846; and the lowest cold, 42°, on the 29th in 1828. During the period 89 days were fine, and on 86 rain fell.

THERE are some volumes which never weary the peruser, and which, whenever taken from the shelf to render profitable a vacant hour, never fail to afford something that delights by its correctness of observation, its novelty of application, or its mode of expression. Among these volumes, are *Essays on the Picturesque*, by SIR UVEDALE PRICE. This friend of Gilpin and Payne Knight, equals them in his acute perception of all that is gratifying in natural objects, and surpasses them in the keenness with which he satirizes and flogs back to better conclusions, those who, under the name of "landscape gardeners," and "improvers," flattened and patched the face of nature. But though he wounds keenly, his cuts, like those of a surgeon, are given to restore to health. "I have been told by some of my friends, that my play is sharp; I believe it may be so; but were I to endeavour to alter it, I could not play at all. I trust, however, that my friends will vouch for me, that whatever sharpness there may be in my style, there is no rancour in my heart. On reading over what I have written, I could not but lament that there should be any controversy between us. Controversy at best is but a rough game, and in some points not unlike the ancient tournaments; where friends and acquaintance, merely for a trial of skill, and love of victory, with all civility and courtesy tilted at each others breasts—tried to unhorse each other—grew more eager and animated—drew their swords—struck where the armour was weakest, and where the steel would bite to the quick—and all without animosity. As these doughty combatants of the days of yore, after many a hard blow given and received, met together in perfect cordiality at the famous round tables; so I hope we often shall meet at the tables of our common friends. And as they, forgetting the smarts of their mutual wounds, gaily discoursed of the charms of beauty, of feats of arms, of various stratagems of war, of the disposition of troops, the choice of ground, and ambuscades in woods and ravines—so we may talk of the many correspondent dispositions and stratagems in your milder art; of its broken picturesque ravines, of the intricacies and concealments of woods and thickets, and of all its softer, and more generally attractive beauties."

The chief offender against good taste in the arrangement of extensive grounds against whom Sir Uvedale Price directed his shafts, was Mr. Lancelot Brown, and with what justice, may be estimated by turning to our memoir of that designer, at page 249 of our fifth volume. So unvarying were his plans, that a gentleman once frustrated his vandal-like levellings, by drawing by anticipation a sketch of what Mr. Brown actually proposed. A smoothing of turf, a curving of water, a belt, and a few clumps of trees, were the invariable recommendations, and the satire was justly apparent, when a gentleman asked Brown, at the time high sheriff—"Why do you not *clump* your scattered javelin men?" Such universal application of the same plan is justly censured by Sir Uvedale Price, and he well illustrates it in this comparison:—

"In the art of medicine, after general principles are acquired, the judgment lies in the application; and every case (as an eminent physician observed to me) must be considered as a special case. This holds precisely in improving, and in both art the quacks are alike; they have no principles, but only a few nostrums which they apply indiscriminately to all situations and all constitutions. Clumps and belts, pills and drops, are distributed with equal skill; the one plants the right, and clears the left, as the other bleeds the east and purges the west ward. The best improver or physician is he who leaves most to nature, who watches and takes advantage of those indications which she points out when left to exert her own powers, but which, when once destroyed or suppressed by an empyric of either kind, present themselves no more."

He was equally just in his condemnation of those, and Brown was of the number, who, sweeping away the terraces and geometric gardens from the immediate vicinity of the residence, brought the turf of the park into contact with its very walls. This violent contrast is never agreeable, for "where architecture, even of the simplest kind, is employed in the dwellings of man, art must be manifest; and all artificial objects may certainly admit, and in many instances require, the accompaniments of art; for to go at once from art, to simple unadorned nature, is too sudden a transition, and wants that sort of gradation and congruity, which, except in particular cases, is so necessary in all that is to please the eye and the mind. Many years are elapsed since I was in Italy, but the impression which the gardens of some of the villas near Rome made upon me, is by no means effaced; though I could have wished to have renewed it, before I entered upon this subject. I remember the rich and magnificent effects of balustrades, fountains, marble basons, and statues, blocks of ancient ruins, with remains of sculpture, the whole mixed with pines and cypresses. I remember also their effect, both as accompaniment to the architecture, and as a foreground to the distance."

Sir Uvedale Price adds:—"I may perhaps have spoken more feelingly on this subject, from having done myself, what I so condemn in others—destroyed an old-fashioned garden. It was not indeed in the high style of those I have described, but it had many of the same circumstances, and which had their effect. As I have long since perceived the advantage which I could have made of them, and how much I could have added to that effect; how well I could in parts have mixed the modern style, and have altered and concealed many of the stiff and glaring formalities, I have long regretted its destruction. I destroyed it, not from disliking it; on the contrary, it was a sacrifice I made against my own sensations, to the prevailing opinion. I doomed it and all its embellishments, with which I had formed such an early connection, to sudden and total destruction; probably much upon the same idea, as many a man of careless, unreflecting, unfeeling goodnature, thought it his duty to vote for demolishing towns, provinces, and their inhabitants, in America: like me (but how different the scale and the interest!) they chose to admit it as a principle, that whatever obstructed the prevailing *system*, must be all thrown down—all laid prostrate: no medium, no conciliatory methods tried, but that whatever might follow, destruction must precede."

Having shown that he considered that style of gardening close to a residence as the best which secured to it the indispensable comfort of a broad, dry walk adjoining its walls; and that he detested the formal levelling and monotonous curving of the more distant grounds, let us lastly enquire what he considered should be aimed at in the disposition of the park, and the answer is in one passage of his own—"That great and universal source of pleasure—*variety*, whose power is independent of beauty, and without which even beauty itself soon ceases to please; and *intricacy*, a quality which, though distinct from variety, is so connected and blended with it, that the one can hardly exist without

the other. According to the idea I have formed of it, intricacy in landscape might be defined, that disposition of objects which, by a partial and uncertain concealment, excites and nourishes curiosity. Variety can hardly require a definition, though, from the practice of many layers-out of ground, one might suppose it did. Upon the whole, it appears to me, that as intricacy in the disposition, and variety in the forms, the tints, and the lights and shadows of objects, are the great characteristics of picturesque scenery; so monotony and baldness are the greatest defects of improved places."

One of the principal modes of teaching the improvers of grounds justly to appreciate picturesque combinations, Sir Uvedale Price insisted was studying the pictures of the best landscape painters, and he did not overrate his success, when in the preface to the work of his old age, he remarked:—"In my Essays on the picturesque, I endeavoured to show that our English system of laying-out grounds is at variance with all the principles of landscape painting, and with the practice of all the most eminent masters. I rather flatter myself, that since the publication of the Essays, fewer distinct clumps have been planted, and fewer clumps of trees made as clump-like as their originally varied character would allow of."*

Sir Uvedale Price was descended from the Ap Rhys clan of Wales, and was born at the family mansion, "that far-famed seat of dignified and benevolent retirement," Foxley, in Herefordshire. The date of his birth was 1747, and it was gracefully said of him, when he died at the age of four-score and two, in the September of 1829—"His learning, his sagacity, his exquisite taste, his indefatigable ardour would have raised to eminence a man much less conspicuous by his station in life, by his correspondence with the principal litterati of Europe, and by the attraction and polish of his conversation and manners. Possessing his admirable faculties to so venerable an age, we must deplore that a gentleman who conferred such honour on our country is removed from that learned retirement in which he delighted, and from that enchanting scene which, in every sense, he so greatly adorned."

In these pages we must not dwell upon his translation of *Pausanias*, and other works, but we will add, that no man more deserved the Baronetage conferred upon him, in 1829, and that no one was a better qualified member of the committee for inspecting models for our public monuments. Among those public monuments, we think he must have included our villages, at all events, we are sure they deserve to be such evidences of our national blessings, and they would be beautiful ones, if this, his suggestion, was adopted:—

"Village-houses generally afford many warm aspects and sheltered situations, where the less hardy climbers will flourish, and of course a still greater number of more exposed walls and projections, against which those that are perfectly hardy may be placed: and from the irregular shape of many of the houses, there are various divisions and compartments of various sizes and heights, by means of which a collector of climbing plants might arrange them, according to their different degrees of hardiness and luxuriancy; so that while he was indulging his favourite passion, he would be adding the most engaging ornaments, to the most pleasing of all rural scenes. In all climbing plants, there is so much beauty arising either from their flowers, their foliage, or from their loose and flexible manner of growing, that no arrangement could well prevent them from giving pleasure to the lover of painting, as well as to every spectator: for the detail would be in a high degree interesting, whether the plants were considered in a botanical light, as detached flourishing specimens; or in a picturesque light, as exhibiting a variety of new combinations of form and colour: the different vegetable tints being sometimes blended with the rich mellow hues of old stone or woodwork; sometimes with the neatness of the fresh colours of new work. Sometimes, too, the more light and delicate leaves and brilliant flowers would appear alone; at other times mixed and twined with large broad leaves: either jagged and deeply indented, such as the Vine; or entire as those of the Aristolochia.

"Though I have particularly dwelt upon the beauty of climbing plants, I do not mean that no others ought to be made use of in such situations as I have described. Where there are brick houses in villages, we sometimes see fruit-trees against them, while honeysuckles or jasmines are trained over the porch or the trellis before the door. This mixture of utility with ornament, of that which is nailed close to the wall, with what hangs loosely over a projection, forms a pleasing variety; indeed, fruit-trees, which in every situation give the chearfullest ideas, are peculiarly adapted to villages; for as they exhibit both in spring and autumn a striking image of fertility, they are the properest, and, indeed, the most usual accompaniments to habitation. Considered, likewise, in another point of view, they are seldom seen to such advantage in other situations: the effect of blossoms, however gay and cheerful, is often, in painters' language, spotty and glaring; but I have frequently observed, that when they were seen near stone buildings or houses of a light colour, the whole (to use the same language) was upon the same scale of colouring, and produced a highly brilliant, but harmonious picture. Should the taste of improvers be turned towards the embellishment of villages, a variety of such standard fruit-trees might be introduced, as are remarkable in their different kinds, not only for their goodness, but for the beauty of their blossoms and fruit.

"It might not perhaps be expected that a lover of painting and of picturesque circumstances, should speak of trees nailed close to a wall, and still less of clipped hedges, as objects that are pleasing to the eye: it is certain, however, that both of them do give pleasure, though upon a totally different principle from a tree in its untouched luxuriant state, bending with the weight of its fruit; or from a neglected hedge with trees and bushes of various heights, and overgrown with ivy and woodbine. The fact is, that neatness and regularity are so connected with the habitation of man, that they almost always please on a small scale, and where that connection is immediate: especially when they are contrasted with what is wild and luxuriant, without being slovenly. A hedge that has been so carefully and regularly trained and sheared as to be of equal thickness from top to bottom, gives pleasure also, from its answering so perfectly the end for which it was designed: on the other hand, where there is a wall, climbing plants may be allowed to spread over it in all their luxuriancy; for they adorn, without injuring it as a fence."

* *Essay on the Modern Pronunciation of the Greek and Latin Languages.* 1827.

On a former occasion we expressed as our conviction that the establishment of the Crystal Palace at Sydenham, surrounded by its own gardens and park, and conducted, as it is proposed, so as to render it accessible at all times and to all people, is one of the most important steps taken during the present century for the improvement of our national horticulture. Since we so expressed ourselves we have had an opportunity to examine more into the details of this magnificent design, and we have risen from the examination still more deeply impressed by its true grandeur. We are too apt to lavish praise upon the useless beautiful, but whilst we admit that all that is beauteous deserves our admiration, yet always do we feel that it is only where utility is combined with the pleasing that we are justified in sounding the trumpet to summon general and special approval. That combination, in the fullest and most entire relationship, is to be found in the Crystal Palace, as now designed to be established; and we feel that we must fail in impressing upon our readers, by

mere words, what we readily discerned when examining the plans and drawings of departments pourtrayed in the colours and forms such as they will be clothed with when completed. We cannot paint in words the effect of a nave of glass, semi-circular roofed, 1608 feet in length, and 108 feet high, entered at one end through the gorgeous plants of the tropics, canopied over by the loftiest Palms, and cooled to the eye by the broad and tender green foliage of the Musas; nor will the wonder cease with the entrance, for from the climate of the tropics—without an intervening veil even of glass—the spectator will pass on uninterrupted, except by a change in the character of the vegetation, to the far more extensive portion devoted to an imitation of the milder climates of the globe. This larger portion will include the transepts—for of these there will be three. Our readers will remember the *one* in Hyde Park, high arching as it did over the included elms; but at Sydenham there will be two such, each 108 feet high, with a central one of 174 feet elevation—thus approaching in height the Monument of London! The general width of the building will be 312 feet, and the lengths of the crossing transepts will be somewhat more than that, the central one being 384 feet long, and the two end transepts 336 feet.

Together, the basement, ground-floor, and galleries, will have an area of about 25 acres. The galleries will be narrowed, and not be occupied by plants, but be reserved for the exhibition of light articles, and still more for seats and vacant spaces from whence striking views of the interior may be obtained. Clustered round by the plants of the milder regions will be various courts, of which eight will be occupied by illustrations of architecture, and antiquities—Assyrian, Egyptian, Greek, Roman, and Mediæval. Four other courts in the central transept will be devoted to the Natural History of the quarters of the globe, nor will either astronomy or geology be without its *academos* within the Palace.

Even the warmest portions will be refreshed with fountains, and there also will be a vast aquarium, in which will be collected together the *Victoria regia*, and other gorgeous water lilies of the tropics.

A well-informed correspondent, who contributed the same information to the *Athenæum*, observes:—

"All these new constructions will be of a kind suited to the intended permanent character of the Palace. For example, the wooden transept ribs will be substituted by iron ribs of increased strength and more aerial appearance; and the strength of the glass will be throughout increased by nearly one-half, from 16 ounces per foot to 21. As the galleries in the existing building would seriously interfere with the growth of the plants with which so large a portion of the interior is to be filled, they will be kept back to the outside walls, except at those points (as the corners of the transepts and nave) from which the most striking views can be commanded of the *coup-d'œil*. There will be also a narrow gallery on the third story, close under the springing of the arched roofs.

"The building will form a vast conservatory, in which, by simple means, the most differing climates will be obtained in various parts, and the characteristic vegetation of the different quarters of the world be fully represented; and this will be done without that oppressive heat which is so much felt in the Palm House at Kew. Among the foliage will be interspersed casts of the most noted groups and statues of the world—both those of antiquity and those of the great home and Continental sculptors of the present day—in a manner which will be new to the great majority of those who witness it, and will at once set at rest the long-vexed question of the right accompaniments to sculpture. Amongst these sculptures, many Englishmen will make their first acquaintance with the finest works of Fraccaroli, Tenerani, Kiss, Schadow, Danneker, Thorwalsden, Jerichau, Pradier, and the other great artists of the German, French, and Italian schools. There will be several quadrangles devoted to the illustration of the successive periods of Architecture and ornamental Art, and of national manners. Thus, the illustrations of Indian life will be collected in a representation of the court of an Indian palace, with reception rooms, &c., and with its adjoining bazaar and shops. So, also, with the Chinese. The Architectural series will extend from the Byzantine period to that of the Renaissance: different courts or quadrangles being appropriated to, and filled with, specimens of the productions of successive ages. Amongst these will be, a court of the Alhambra, produced under the immediate care of Mr. Owen Jones; and a Pompeian house, by Mr. Wyatt. In one of the smaller transepts will be collected exact reproductions of the most wonderful of the remains of Egyptian art, and illustrations of Egyptian manners. Among these will be conspicuous the sitting figure of an Egyptian king, from Aboo Simbel, in Nubia, more than forty-five feet high, completely coloured after the original. In the basement below the present ground floor will be reproduced one of the large Egyptian tombs.

"With the series of architectural and ornamental casts will be combined all such illustrations of extinct or dormant processes of Art as may be interesting as affording either illustrations of the past or hints for the future. Thus, in connexion with Italian art will be introduced specimens of fresco, tempera, sgraffito, mosaic, &c.; in connexion with mediæval design, specimens of caligraphy, metal working, mural decorations, embroidery, enamel, niello, &c. All these, by means of casts, fac-similes, and in many cases of the objects themselves, are within the reach of the Directors; and the whole will be so enclosed by foliage, interspersed with statues and other ornamental objects, as in no way to interfere with the harmony and entirety of one great general impression.

"Large spaces will be left for the general purposes of exhibition, in which it is intended to have geological exhibitions—arranged not as mere collections, but so as to render it impossible not to comprehend the order, construction, and connexion of the various strata and their contained fossils, the appearance of the country lying over each, &c. Also exhibitions of the great staple materials of the world, from their raw condition through all their various stages up to the most perfect manufactures—involving the presence of machinery of the most complicated and interesting description in full work.

"The grounds around the building—which are upwards of 250 acres—will be laid out as a park and garden, with the addition of one feature not common to English parks—that of fountains. Those Londoners who have gained their conception of a fountain from the pigmy jets in Trafalgar-square, and in the Temple Gardens, will find it difficult to realise those of which we speak; the highest jets of which will reach an altitude of 150 feet, while in mass and total effect they will equal those of Versailles. It is in contemplation to provide the lovers of manly sports with every opportunity for gratifying their desires, whether taking the shape of cricket and archery, or that of the less common games of tennis, raquet, and golf. Besides these, there will be baths and swimming-places, and extensive skating grounds, so shallow that, while they will bear after one night's frost, they will not need the presence of any Humane Society officers for the preservation of the skaters."

Passing from the palace to the three hundred acres of park around it, we can promise our readers that these will be devoted with equal care to the culture of hardy trees and other useful plants. We believe, and we hope, because we know how extensive will be their utility, that the Arboretum, Orchard, and Flower and

Kitchen Gardens will be fully exemplified. We are the more anxious upon this point, because we have more than one letter upon the subject, from which we will select this from a most intelligent member of the Society of Friends:—

"Seeing that one object of the projectors of the new Crystal Palace is to do away with the local barriers and restrictions which now confine the advantages of floriculture to the opulent *few* who are subscribers to the Royal Botanic, Chiswick, and other similar establishments, and to throw the Sydenham Gardens open at a small cost to the *million*, it is devoutly to be hoped that this end will be steadily kept in view; and although exotic and rare plants may form a noble and interesting feature in the grand design, that our truly valuable, and scarcely less ornamental, hardy perennial plants will claim a due share of their attention. These properly belong to the *million*, who, though they may have their gardens, have not the accessories of stoves and hothouses for carrying on the higher branches of flower cultivation. The effect would be, to improve largely the floral taste of the age, to gratify thousands who at present are unacquainted with the many beautiful tribes of plants within their reach and means of management; it would redeem from neglect, and restore numbers of gems now almost lost sight of through the prevailing taste for the bedding system, and give a stimulus, not only to their higher cultivation, but also to the increase of new rarieties by hybridization, and to the introduction of many new ones from friends who are settled in distant Colonies. Let any one take up the "Cottage Gardeners' Dictionary," and see the numbers of hardy perennials there described, and he will be surprised at the many with which he is unacquainted even by name, and has no knowledge as to where to seek them: these, by degrees, might all be introduced into the gardens at Sydenham, and that not at a great cost. It is a frequent remark among the lovers of flowers of the middle and lower ranks, that at the present public flower shows, the principal plants exhibited are beyond their means of cultivation, and this is a drawback to their enjoyment. Let us hope that in the new undertaking this defect will be obviated, and this want supplied. If profit be an element in the scheme, it will certainly increase the number of visitors, and add to the railway traffic. There is yet another feature connected with the last point which might be mentioned. If a nursery was attached, containing the duplicates, or surplus stock of the various plants cultivated in the gardens, and these were sold at a moderate cost, it would be an immense boon to the public." S. P., *Rushmere.*

Notwithstanding those courts devoted to special purposes which we have enumerated, there will still be large spaces in the central transept, and elsewhere, open for occasional exhibitions. The public have their attention upon this already, and how alive they are to the Palace's useful capabilities may be learned from the following letter, written by one very favourably known to our readers:—

"What have the lovers of poultry to do with the Crystal Palace?

"The pleasure of one party can scarcely exceed the pleasure of the whole community—high and low, great and small—at the continued existence of this monument of our pride and pleasure.

"Charles Dickens, speaking of Chalk Farm Fair, says, 'Imagine in this broken, dusty, confined patch of building-ground, a compact, wedged-in, fighting, screeching, yelling, blaspheming crowd. * * * * There was more crime, more depravity, more drunkenness and blasphemy, more sweltering, raging, and struggling in the dusty, mangy, back-yard of a place, than in a whole German principality.' I, too, have both *seen* and *heard* Chalk Farm Fair, although not like this great practical preacher, by mingling in its masses; the description which he gives is not exaggerated. By way of contrast, let any one compare with it and similar places, of which there are so many, one of the most crowded days at the Crystal Palace, the hundred thousand persons, or more, divided into family parties or friendly groups, the hum of happy voices, the comfortable pic-nic parties regaling themselves in the open refreshment courts, the order and perfect enjoyment that reigned throughout the building, and *all* will—must—feel pleasure and delight on seeing it restored.

"The benefit to the country, and to its morals, likely to result from an innocent pleasure, which, it is to be hoped, may be enjoyed, like the great exhibition, by all classes, is for others to consider; but the admirers of beautiful poultry cannot help regarding the removal of the Crystal Palace with a perspective hope concerning their own particular fancy. Last year, after wandering about it a sufficient number of times to become a little acquainted with its intricacies, and after seeing the machinery and carriage departments, the idea at once occurred to me that it would be a beautiful place for poultry exhibitions. Here the pens might be large enough to show the birds to the best advantage, and the most valuable fowls might be exhibited without danger of injuring them in health, which I am told by exhibitors is the great danger now, even in the best buildings at present at command for this purpose. At Sydenham there are no clustering houses crowded round the place for the inhabitants to declare, naturally enough, that the poultry *shall not* come there; that the beasts are quite bad enough, but that they *positively will not have* the additional annoyance of a thousand cocks crowing at once.

"If the liberal purchasers of the Crystal Palace could dedicate a portion of the building to this use, it would certainly be an excellent place for the purpose; but to speak of this at present would be premature: it is only now being removed, and cannot be completed for many months. If *our* show wait for that, it must decidedly wait until 1853, and commence its career at Sydenham. This was not the subject on which I proposed to myself to write when I took up the pen.

"Besides exhibitions of only occasional occurrence, the amateurs of poultry, and those who wish to become connoisseurs, those who can appreciate the best sorts, and would willingly see them become more plentiful, have another want; they require a continuing aviary of all the choice and good kinds of domestic fowls known in the country to which to apply, as to a book of reference. *Now*, persons who wish to procure fowls with the peculiarities of which they are not well acquainted, must choose in ignorance, must select the stock, guided by some written description only, or must subject themselves to the very possible mistakes, unintentional, or otherwise, of those who are desirous of parting with their own specimens. I believe there is no such collection in England, unless it may possibly exist in the possession of some extensive dealer or amateur, neither of whom would like to be at the trouble and expense of rendering it very complete by keeping *all* the different varieties. If the owners of the Crystal Palace could be induced to add this to its other useful and instructive novelties, it would, I think, prove both original and attractive.

"Under the charge of some competent person, remunerated by a salary large enough to prove an inducement to bestow upon it sufficient attention, with knowledge to make good selections, intelligence to order the arrangements in the best manner, and probity to allow the proprietors to profit by all these things, it might surely be made a self-supporting department.

"The members of this little feathered community must be as few in number as is consistent with having all kinds duly represented, and each bird should be as perfect a specimen of his or her sort as can possibly be procured. The arrangements need not be very extensive—twenty or five-and-twenty compartments—one for the exhibition of each little family, with perhaps half-a-dozen of smaller size for bantams, the different runs confining each a cock and two hens with a single brood of chickens, in the season, to shew what the development of the young ones should be, and a small number of homes for water fowl. These, and some accommodation *not for exhibition*, in which to rear young ones for the purpose of changing or replacing the exhibited birds, would be all that would be necessary. If prettily arranged it would certainly form a very pleasing exhibition. The stately, strutting Spanish, by the bright-

plumaged Cochin-China, and all the pretty varieties of tufted heads, and pencilled and spangled plumage, with colours and sizes nicely contrasted, all preserved with perfect order and cleanliness, would form an exhibition which few visitors to the Crystal Palace at Sydenham would willingly overlook."

We have exceeded our usual limits upon one subject, yet we are very far from having exhausted our theme; however, we must now conclude, and it shall be in the following extract from a letter we have received from a high authority connected with the Crystal Palace Company; and we publish it, not to gladden the hearts of the shareholders, but to shew what powerful attractions one who is conversant with the Crystal Palace knows it will exercise over the public:—

"If you like to quote my opinions as to the return which I hope and believe, you shall be at liberty to do so.

	£	s.	d.
By rent of stalls, and for refreshment rooms, &c.	60,000	0	0
By passengers from Brighton railway	60,000	0	0
By visitors exclusive of Brighton railway	30,000	0	0
	£150,000	0	0

"I believe that these sums, which shew a profit of 30 per cent. per annum, will be clear of expenses, and will be below the average until we get a West-end line by railway (which is in contemplation), and then the revenue will be increased."

GOSSIP.

MANY years since, when lecturing on some of our chief cultivated crops, we observed of *Wheat*, that "the fact of its never being found wild seems to be only explicable on the supposition that it is some other grass altered by cultivation." The only illustrations of somewhat similar known changes which we adduced, were those effected in the carrot, asparagus, apple, and pansey. That surmise has recently been demonstrated to be correct by the experiments of M. Esprit Fabre, of Agde, published in a pamphlet by Professor Dumal, of Montpelier. These experiments, commenced in 1839 and continued until 1850, prove, if they are correct, that a variety of the grass, *Ægilops ovata*, which variety has been called *Æ. triticoides*, if carefully cultivated, and the seed each year carefully sown during twelve consecutive years, gradually improves and becomes real wheat. It is a circumstance deserving of notice that the *Ægilops ovata* is a native of Sicily, that island in which the ancients stated that Ceres, the goddess of harvests, first showed herself to mankind, and who first taught them the use of corn. Does not this justify the supposition that the ancients were aware of the origin of wheat, but, as usual, concealed their knowledge within a myth?

The *Poultry Exhibition* at Lewes, forming a portion of the Royal Agricultural Society's Show, extending from the 12th to the 16th instant, was not characterized by excellence. There were about 70 pens of fowls, well accommodated in boxes about three feet square, raised to a level with the eye of the spectator, and with fronts only enclosed by wide-meshed, wire-netted doors. No exhibition ever demonstrated the want of knowledge, with regard to the desirable characteristics of poultry, more than did this; for in the pens of "*pure* Dorkings" and "*pure* Sussex," there were mongrels with almost every possible degree of cross with the game and other breeds. For example, have "the old Sussex" variety single or double combs? for there were both kinds exhibited, and with every imaginable variety of plumage. It is somewhat curious, too, that for these breeds but one prize, and that only the third, was secured by an inhabitant of Kent, Surrey, or Sussex. The prize birds in the *Cochin-China* class were really good, for they carried away the award from those exhibited by Mr. Sturgeon, and Mr. Punchard. Both the prizes were won by Mr. H. B. Higgs, of Southampton, and we are well-pleased to say, that three more beautiful, well-grown, fine-conditioned birds than those bred by himself, and which gained the first prize, we never looked upon. They were of the favourite buff, or pale cinnamon colour, and had yellow, well-feathered legs. We append the list of prizes, but none of the other lots merit a comment. The judges were the Rev. Stephen Lawley, Mr. John Baily, and Mr. T. B. Wright.

CLASS 1.—*Cock and two Hens of the Dorking (white, speckled or grey), Surrey, or Old Sussex, or Kent.*

First Prize of £5 to Mr. Thomas Townley Parker, of Sutton Grange, St. Helens, Lancaster (a grey Dorking cock and 2 hens; bred by himself, 15 months old).

Second Prize of £3 to Mr. Henry Blandford, of Sandridge, near Melksham (speckled Dorking cock and 2 hens; bred by himself, 4 months and 2 weeks old).

Third Prize of £2 to Mr. James Lewry, of Handcross, near Slaugham, Sussex (Dorking cock and 2 hens; bred by himself, 5 months and two weeks old).

CLASS 2.—*Cock and two Hens of the Malay, Cochin-China, or other Asiatic breed.*

First Prize of £3 to Mr. Henry B. Higgs, of Hill Lodge, Southampton (Cochin cock and 2 hens; 5 months and 1 week old, bred by himself).

Second Prize of £2 to Mr. Henry B. Higgs (Cochin cock and 2 hens; 4 months old, bred by himself).

CLASS 3.—*Cock and two Hens of the Spanish, Hamburgh, or Polish breed.*

First Prize of £3 to Mr. Geo. C. Adkins, of Edgbaston, Birmingham (a black Polish cock and 2 hens; about 12 months old, breeder unknown. These were very beautiful).

Second Prize of £2 to Mr. Joseph Tuley, of Matchless House, near Keighly (gold spangled Hamburghs; cock 26 months, and 2 hens 14 months old, bred by Mr. John Driver, of Coln).

CLASS 4.—*Cock and two Hens of any other pure breed.*

First Prize of £3 to Mr. Joseph Tuley, of Matchless House, Keighly, Yorkshire (Bolton grey cock and 2 hens; 26 months old, bred by himself).

Second Prize of £2 to Mr. Wm. Ludlam, of Bradford, Yorkshire (silver pheasant cock and 2 hens; 24 months old, bred by himself).

CLASS 5.—*Cock and two Hens of any mixed breed.*

First Prize of £3 to Mr. J. T. Leigh, of Turnham Green, Middlesex (golden bantams, (Sir John Sebright's), cock and 2 hens; 24 months old, bred by himself).

Second Prize of £2. Withheld.

TURKEYS.

CLASS 6.—*Cock and two Hen Turkeys.*

First Prize of £4.
Second Prize of £2. } Withheld.

GEESE.

CLASS 7.—*Gander and two Geese.*

First Prize of £3 to Mr. Thomas Townley Parker, of Sutton Grange, near St. Helens, Lancaster (Toulouse gander and 2 geese; 3 months and 2 weeks old, bred by himself).

Second Prize of £2 to Robert Glover, of Holt Hall, Fazeley, Staffordshire (white gander and 2 geese; age unknown, bred by the Rev. John Robinson, of Widmerpool).

DUCKS.

Class 8.—*Drake and two Ducks of the Aylesbury or any other white variety.*

First Prize of £2 to Mr. Robert Glover, of Holt Hall, Fazeley, Staffordshire (white Aylesbury's; about 2 years old, bred by himself).

Second Prize of £1. Withheld.

Class 9.—*Drake and two Ducks of any other good variety.*

First Prize of £2 to Mr. T. T. Parker, of Sutton Grange, St. Helens, Lancaster (Rouens; 12½ months old, bred by himself).

Second Prize of £1 to the Right Hon. the Earl of March, of Molecombe, Chichester (wild variety; drake 24 months, and ducks 10 months old, bred by himself).

Class 10.—*Best Cock and two Hen Guinea fowls.*

No Entry.

One of the judges says (*Midland Counties Herald*), "The show of poultry was not large, but it proved highly attractive to the visitors, that part of the yard in which the specimens were arranged being constantly crowded. The prize list was scarcely adapted in some respects for an exhibition at this period of the year. With proper alterations, we have no doubt that this department of the exhibition will next year be greatly extended. The judges, we understand, disqualified several pens of Cochin-China fowls, in which the principal feathers in the tail of the cock had been removed. The enthusiasm shown by the poultry amateurs in the south of England is quite equal to that of their friends in the midland and northern counties; and the competition in Birmingham, in December, next may be expected to be extremely severe in every class."

That there *is* something in a name, was evidenced by *The Grand National Horticultural Show* at Lewes on the 14th and 15th instant. If it had been merely announced as a local exhibition, expectation would not have been excited to anticipate more than is usually found at such gatherings, but something extraordinary was necessarily expected at "A Grand National." We need scarcely say that the expectation was disappointed. It would be difficult to recollect a horticultural show where so many ill-grown, ill-arranged, over-potted plants were straggled over so much space, mixed with bad cut flowers in old china and odd-looking vessels. Of course there were some exceptions, and among these, a very splendid exception, were the 500 varieties of cut roses, exhibited by Mr. Mitchel, florist, of Maresfield. The failure of the show is not attributable to the committee, who worked hard, nor to the ground, for it was beautiful and well arranged; but it would require herculean efforts to render a show successful in July, in the midst of a still more attractive show, at such an out-of-the-way place as Lewes.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Allendale, Sept. 11th. (*Secs.*, G. Dickinson and G. J. French.)
Bath, July 29th, Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)
Bridgewater, Sept. 22. (*Secs.*, Mr. J. Leaker and Mr. J. Hayward.)
Brigg, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
Bury St. Edmunds, July 30 (Picotees); Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
Caledonian (Inverleith Row), Edinburgh, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, Aug. 26.
Clapham, Sept. 11.
Colchester and East Essex, Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Derby, Aug. 4.
Durham, Sept. 8.
Forfarshire (Eastern), Sept. 15 (Arbroath).
Glasgow, Sept. 10.
Hampshire, Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hexham, Sept. 15, 16.
Hull, Aug. 4, Sept. 16.
Kirkcaldy (Fifeshire), Sept. 9.
Lincoln, Sept. 14.
Liverpool, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Maidstone. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), Sept. 10.
Newbury, Sept. 3.
North London, Nov. 23, Chrysanthemum.
Northampton, Sept. 27, Dahlia.
Oxfordshire (Royal), July 29; Sept. 23. (*Secs.*, C. Tawney and W. Undershell, Esqrs.)
Peebleshire, Sept. 14th. (*Sec.*, J. Stirling.)
Ponteland (Newcastle-upon-Tyne), Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)
South Devon Botanical and Horticultural, Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, Aug. 6, Sept. 17.
Whitehaven, Sept. 17, Dahlias.

POULTRY SHOWS.

Birmingham and Midland Counties, 14th, 15th, 16th, and 17th December.
Bristol Agricultural, December 7th, 8th, and 9th. (*Sec.* James Marmont.)
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).
Cornwall (Penzance), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)
Liverpool, Sept. 23.

† For seedlings only.

GARDEN STRUCTURES.

The receipt of some queries connected with hothouses, pits, frames, and other garden structures, seems to mark it out as a duty, on the part of The Cottage Gardener's staff, to discuss this subject occasionally; and in doing so, if our respective opinions should sometimes undergo collision, so much the better, so long as we keep our tempers; and certainly the loss of that valuable commodity has not as yet constituted ground of accusation against our hitherto harmonious band. Long may they continue in harmony of feeling.

One correspondent, L. B. T., says, "Will you give me some information respecting some pits I want to build. I want one for strawberries, to be succeeded by melons: of strawberries about three hundred pots. I also want a propagating pit, and one for potatoes." The rest of our querist's observations are of so special a character, that they are answered in the querists' column.

Let us now examine the conditions requisite for successful *Strawberry forcing*, and for growing *Melons*, and in so doing let us consider how far they can be recon-

ciled, and what compromise is necessary, if a pit *must* be appropriated to them.

Heat.—Strawberries do not require much heat—nay, will not endure it. A temperature commencing with their first introduction to heat of 50°, advancing by easy gradations to 65° when in blossom, and until they begin to colour, suits them best; and if they can be lowered during colouring to 55° or 60°, by abundance of air, so much the better for their colour and flavour.

Atmospheric Moisture.—Strawberries love a liberal amount through all the stages of forcing—least when ripening; not, however, what is termed steaming, but a steady and permanent supply.

Ventilation.—No in-door fruit requires a more liberal airing than this; it may be almost affirmed that the success will in a great degree be commensurate with the amount and frequency of the ventilation, provided the necessary warmth and air moisture can be sustained.

Light.—Although a considerable amount of light—or, in other words, a somewhat light situation—suits the strawberry, yet it must not be considered as requiring that intensity which the melon needs. Indeed, during the earlier stages—the expansion of the foliage and the development of the blossom—it is customary to assign them a subordinate position in this respect.

So far the strawberry as to the four elements—the means to the end in view; let us now examine the *Melon* by the same standard.

Heat.—Here we have the very converse of the strawberry. Too much heat, in the gardening sense of the word, can hardly be accorded to the melon, provided light and air-moisture keep pace with it. The melon will enjoy, thus situated, 95° unscathed, and, indeed, *must*, under all circumstances, have 70° available, the only exception being during ripening, when a higher flavour is secured by suffering it to be reduced to 60° and 65° by liberal ventilation.

Atmospheric Moisture.—Although the melon at certain periods—such as "swelling off"—enjoys a considerable amount, yet a constant jealousy is requisite, especially during dull and damp periods, in order to secure it from a gangrenous tendency.

Light.—It is scarcely possible for the light to be too bright for the melon, provided a powerful root action is sustained. There are periods when a slight shading is beneficial, such as during the early part of the swelling period, and after a "run" of bright weather; but such is quite an exception to the rule.

Ventilation.—There are three distinct periods in the life of a melon, each characterized by some peculiarity of treatment; for instance, the growth and setting period, the swelling period, and the ripening period. The first and last demand a most liberal ventilation; the middle period a very moderate degree. Thus stands the case, then, as to these two crops; and in order to carry out the melon culture, which runs to greater extremes, in point of heat and light at least, it is plain means must be placed within the reach of the cultivator beyond the needs of the strawberry. An analysis of the case will be as follows:—

	Degree of Heat.	*Air, Moisture.*	*Light.*	*Ventilation.*
Melon	maximum	medium	maximum	medium
Strawberry	medium	maximum	medium	maximum

The result will be, that to use a pit or house for these two crops, a maximum amount of the four elements must be provided. However, as the melons are, of course, succession crops, and produced when the sun is gaining some power, less heating apparatus becomes necessary than for early work. This is merely presuming that the cultivator has made up his mind always to employ this pit the same way. It may be observed, too, that during the time the strawberries occupy the pit, which will be from December to April, some use might possibly be made of the space overhead, especially if it is a roomy pit or a small house. Thus: suppose a low house or pit, possessing a back walk thirty inches wide, and an interior pit, chambered, of six feet, with a moderate pitch of roof, and the surface of the interior pit about three feet from the roof, and parallel with it, here would be a useful thing for the purpose. There might be a back shelf of nearly twenty inches for kidney beans or cucumbers; and as the heat for the strawberries would not warrant a beginning with the latter crops until February, the shelf might be occupied with strawberries, bedding plants for propagation, bulbs, or various pot plants, until the cucumbers in boxes, or kidney beans, were set to work; and, ultimately, the house or pit would be engaged for melons and cucumbers all the summer.

A pit for such a mixed purpose would require a flow and return pipe in front, and a pipe-tank or other source of bottom-heat in the pit; the latter being chambered, with sliders in the back wall of the interior pit, to suffer surplus heat and air-moisture to escape into the house when necessary, and to spare. The pit should have sliding front sashes, for most of the ventilation would have to be carried out there, and a canvass shade applied occasionally over the back walk, in order to supersede the necessity of giving much air over the cucumbers; still, however, providing a few sliding ventilators in the outer back wall, within a few inches of the very apex, to resort to in time of need. In such a house or pit, the objects described might be carried out in style, and, indeed, the pit would be capable of a variety of other purposes. But the modes by which such objects may be carried out are indeed various, and ought at all times to be ruled in some degree by the circumstances of the establishment, more especially by the consideration of the question, whether such will form a necessary portion of the whole gardening system; for there is more blundering and bungling in this portion of gardening economics than in anything extant. Our readers will, we trust, excuse the tedium of following out this subject somewhat analytically, but we do think this by far the best course with regard to the question of structures for mixed purposes; for to set out with ill-defined objects is assuredly a false economy, and almost sure to end in futility and disappointment.

Persons about making changes, and extending their glazed structures, should at once take into serious consideration the character of those already available; and see whether by well-digested schemes they can perform a sort of horticultural revolution, without damage to the state; nay, with immense advantages. We are certainly no friends to the reformer, who, whilst brushing away the cobwebs, the accumulation of years, with itching and undistinguishing hand brushes away tea-cups and saucers; yea, the very fixtures of the fine old mansion. This, however, is no solid reason why a man should turn coward over his affairs, and for fear of doing wrong be not able to do right.

We repeat, that every one should aim at a system in his glazed structures, which should in every establishment resemble those geographical puzzles, in which, if you derange one portion, the whole world is out of joint. In no department of horticulture is there more room for reform than in this, and more sound advice is needed on this point than perhaps any other. Persons about to make changes this way, should call in a first-rate *real practical*—one with whitened chin. They should at once draw up a set of objects distinctly specified, and after showing this "king of spades," their existing glass, require him to chalk out a system at once complete and economical.

We shall feel a pleasure in returning to such subjects when occasion serves, feeling assured that it will subserve the purpose of many of the readers of the far-travelling, but never weary, COTTAGE GARDENER.

R. ERRINGTON.

FINAL NOTES ON THE EXHIBITIONS.

The specimen of *Humea elegans* which I mentioned last week as being exhibited at Chiswick, and another of *Ipomœa*, or *Pharbitis Learii*, which stood not far from it, required as much skill and good gardening to bring them out, such as they were, as any two plants exhibited. The blue *Ipomœa* was a triumph of skill and good management; every leaf was perfectly healthy down to the rim of the large pot, and the whole surface of the large trellis on which it was trained was filled with the most luxuriant growth and bloom. Some good gardeners, whom I could name, could never keep this fine climber in health, even after planting it out into a free border.

Pleroma elegans.—This is magnificent for a specimen plant; but very few gardeners have yet made the discovery how to grow it fit to be seen, and so we had only one specimen of it shown all the season. It was at the last Chiswick exhibition; the plant and growth were specimens of skillful training and culture; there were not many flowers open, but the ends of all the shoots were studded with blossom-buds, much after the fashion of the Gum cistus, but the shape and size of the flower are more like *Lisyanthus Russellianus*, and the colour is most rich and lovely,—a bluish purple of the richest dye. It is altogether one of the finest plants we have in cultivation; and this specimen proves that it will grow and bloom as freely as a Gum cistus on the lawn when properly treated. It is a warm greenhouse plant, but would grow and bloom out-of-doors in a shaded peat border from July to the end of September; after blooming, it may be cut in as close as a geranium; and after a little growth be shaken out of the old soil the same way. It requires no more heat in winter than a geranium; but as soon as it begins to grow in the spring, a moist pit, with a gentle bottom-heat, with plenty of air and light, are necessaries to its final success; and, last of all, the compost they use for the Epacris, with less than one-third very good mellow loam added to it, will suit this beautiful plant to perfection, and it will grow in time to the size of a large gooseberry bush.

Clerodendrons.—Of these *C. Kæmpferi* is the richest and finest they exhibit; *C. fallax* the next best, and there are several good varieties of it now; but they have an exceedingly bad sort of *C. paniculatum* about London, and they grow it so badly that it is a disgrace to the gardening of the country to see the abortive apologies they bring to table; but it is by over-doing the thing that they spoil this Clerodendron, and, perhaps, that is the reason also of the nasty dull colour or no colour of their flowers. If I was one of the judges, I would disqualify a collection if there was a *C. paniculatum* in it with the flower-spike less symmetrical than the top half of a church spire, for that is its natural shape. All monstrosities and coxcomb growths in this part of the plant detracts from its natural beauty and symmetry, and also diminishes the length of the pannicle.

Gloriosa superba.—This fine old plant came out on two occasions, first at the Regent's Park, and again at Chiswick; and were it not for a specimen of it which Mr. Ayres exhibited two or three years back, we would all say that this was the best specimen of it ever produced. Good strong tubers (not bulbs) of this will bloom as freely as the Japan lilies, to which it is related, but not in near affinity; although *Gloriosa* is almost placed side by side with the true lilies by our best authors, there can be no question of their being as far apart as great grand-cousins, still the same times of growth and rest, and the same compost, will suit both parties, only that the *Gloriosa* needs a strong bottom-heat at first, and afterwards to be trained; but it is worth all the pains you can bestow on it.

Crinums.—There was a large mass of one of the Asiatic crinums belonging to the section with columnar stems above the bulb, with plain white flowers, so common in this fine genus; it had a wrong second name, but was a fine specimen of bulb culture.

Æschynanths.—The one called *pulcher* was at Chiswick in fine bloom, and covered a barrel trellis nearly four feet high; and there was another plant very much akin to the same genus, called *Agalmyla* (beauty of the forest) *staminea*. This was a very small plant, and the soft shoots being trained down on the surface of the pot, and producing their flowers from the lower parts, might deceive one into the belief that this species sends up its scarlet flowers direct from the ground roots, instead of which, however, the plant can be trained like any of the *Æschynanths*, and the flowers will show after the same fashion. I saw one little plant called *Cyrtanthera magnifica*, which I took to be a magnificent error. I never heard of such a name, and the plant was as much like *Justicia purpurea* as anything could be; some people call this *carnea*, but the true *J. carnea* is quite a different thing, and not nearly so useful a plant. Mr. Cattleugh used to exhibit fine specimens of the *J. purpurea*.

Pavetta Caffra.—This is an old stove plant; a tall, loose grower by nature for a shrub. Mrs. Lawrence used to have it finely in bloom, at six or seven feet high. It came out this season in quite another, and in a much better, style, grown as a low bush, like a geranium; and whoever succeeds with it that way will not regret reading my random recollections of the exhibitions. Let an old ugly plant of it, now not fit to be seen, but useful for cut flowers, be cut down to within nine inches of the pot; if the roots are good, this stump will beard out surprizingly, and you must thin the shoots; then, when they are an inch long, shake away the soil from the roots, and prune them as Mr. Errington would those of a young pear tree. In other words, root-prune this Pavetta most severely, and put it into the smallest pot you can get the roots into; after that, go on with it, year after year, as you would with a geranium. Here, then, is a great point gained; and if it is true that the constant dropping of water will wear away the hardest stone, surely it must be no less true that the industry of British gardeners, stimulated by gold and silver medals, will overcome all difficulties in the way of growing plants, and bring in a host of fine plants that have long since been neglected, because, under less favourable circumstances, they were not found to yield to the first few experiments. This Pavetta was from Messrs. Fraser, of the Lee Bridge Nursery, the enduring rivals to Mrs. Lawrence, until she bought up their opposition. But now they are coming round again; they were the first who showed the capabilities of the old *Crassula*, now erroneously called *Kalosanthus coccinea*, and their specimen of it at this exhibition had more lustre in it than any out of the great numbers that were shown.

I do not know who first took up the erroneous idea that *Kalosanthes* was meant for *Crassula coccinea*, but it was no such thing. The word was coined by the late Mr. Haworth for *Rochea falcata*, quite a different plant; but very few of Haworth's names have been adopted by authors, and Kalosanthes is one of the rejected, and yet it meets you at every turn round all the exhibitions.

Tristania nereifolia, a very old New Holland plant, belonging to Myrtleblooms, with quantities of small yellow flowers towards the tops of the branches, was in Messrs. Fraser's collection, and when it can be bloomed near home, like their *Pavetta*, it will come to be a general favourite. They had also *Turnera trioniflora*, as easy to grow as anything, but as uncertain for full-blown flowers, when you want them, as the smiles of a giddy maiden, and yet, on a fine sunny day, what can

be more beautiful than these flowers, or more charming than those open smiles. *Rhyncospermum Jasminoides*, all but a hardy climber, Messrs. Fraser had an immense specimen of. It was also at all the exhibitions, and early in the spring at the Rooms in Regent-street; but no one who has seen it in a flourishing state planted out in the open air, against a wall, pillar, or paling, will ever make up his or her mind to it in a pot. It is just the same with *Mandevilla suaveolens;* and they tell me it is the same also with the *Escallonia macrantha*, and with *Mitraria coccinea*, both of which stood out last winter in several places in Scotland, and I think Mr. Veitch told me that *Mitraria coccinea* is one of their finest out-border shrubs; those, therefore, who do not know this fine plant may get an idea of it by supposing *Correa pulchella* studded all over with the flowers of some scarlet gesnera. It has been at all the summer shows, and deserves universal cultivation.

I cannot go farther without mentioning the gratifying fact, that a whole row of the *Œnothera speciosa* opened its pure white blossoms with me on the first of July; that they are in a light, rich border, where the sun does not reach them till four o'clock in the afternoon; and that they keep open day and night, and promise to do so to the end of the season. Every one who has a flower-bed, or nice border to fill, ought to get hold of this *Œnothera*, for it will answer equally well for growing in masses, and for distributing in single plants along a border, as S. P., of Rushmere, uses it.

I see they have began to raise seedlings from the *Crassula coccinea*; and there was one exhibited at Chiswick which seems a cross between *miniata* and *coccinea*, for it is exactly intermediate between the two; less white in the eye than *miniata*, and the white lower down in the throat. It is called *Beauty of Charonne*.

Mr. Appleby's employers sent their beautiful *Phlox Mayii variegata*, and their crimson-purple one, called *Thomsonii*; two of the very best yet seen from *Drummondii*. Also two very nice dwarf blue *Lobelias* for beds, with part of the habit of *gracilis*, but not quite so strong; one is called *Ramosoides*, a dark blue, and the other *Erinus occulata*, meaning white-eyed, because it is bright white in the eye, and the blue is lighter than the other.

Mr. Veitch had two very nice *Collinsias;* one a purplish and lilac colour, and much streaked, called *Multicolor*, and a lighter one than *Bicolor*, called *Bartsifolia*. Also a yellowish *Leptosiphon*, with a reddish eye, which will make a nice early bed; I did not learn the second name, but I believe Mr. Bentham named it from Mr. Hartney's specimens.

There was a fine plant of that extraordinary *Araucaria* called after Cook, the great circumnavigator, from Mr. Appleby's employers; and I saw *Araucaria Bidwillii* in the large conservatory of the society; it looks as if intermediate between *imbricata* and *Braziliensis*. This brings me to Mr. Fortune's new conifers from China, which are really splendid evergreens, and if they are quite hardy, as he and Mr. Standish believe they are, they will vie with the best from California and Patagonia, and also be fit companions to the latter—*Saxgothea*, and *Fitzroya*. First of all, there is a spruce, which looks exactly as if it was a cross between our common yew and silver fir, but of more open and freer growth than either of them; the name is *Abies jezoensis*. The history of it is very singular. Mr. Fortune sent off a tree of it nearly as thick as my arm, which died down to the ground on its passage to England, and as conifers do not stole, or throw up suckers, the Bagshot folks thought it was all up with this treasure; not so, however; for after awhile suckers came out as thickly as bristles on the back of a hedgehog, and no doubt they were all made into plants except one, and that one was on the old stump at this exhibition, and nearly six feet high, with all the character of a seedling, as visitors took it to be; but I scratched off the moss from the top of the pot to see that all this was true to the letter. I think Dutrochet, or Decandolle, once mentioned a fir in the south of France that make a sucker some years after being cut down, but I forget the story. The next is called *Cephalotaxus Fortuni*. The literal translation of this new name is, Mr. Fortune's *head of yew;* and the meaning is, that one might take it for some kind of yew if seen at a long distance off, but when you come near to it you would say it was a cross between the new Evergreen Cypress and some monster yew; the leaves being just like a yew leaf, but longer and more wide, and set farther apart from each other, and the growth is quite as free and fast as that of Evergreen Cypress; altogether it is one of the very finest trees ever introduced. Mr. Fortune told me he did not see it grow higher than thirty feet; that Oaks, Chimonanths, *Weigela rosea*, and such hardy plants were growing in the same parts, and that he believes it to be quite hardy, but he could not meet with it in fruit. He employed some natives to get cones for him, and from these two very distinct plants have been reared, which they call male and female, but I doubt that altogether, and I think they are two very distinct species; the second is much smaller in all the parts, and more like a silver fir than a *Cephalotaxus*.

The next greatest curiosity was a beautifully trained large plant of *Stephanotis floribunda*, in full fruit and bloom. The fruit looked like young green vegetable marrows, when fit for a French cook to slice up for white sauce. A branch of the *Date Palm* in fruit was also exhibited; perhaps the most useful fruit of this noble family, supplying, as it does, food and sustenance to the wild desert tribes. Also a very nice *Pear Tree* in a pot, looking as well as could be, and having green fruit, but not a great crop as the pot was but small. They often show grapes in pots, but by the time the grapes are ripe the vines are not fit to be seen, and I often thought they would be much better left at home; and no one has ever made a fortune or a reputation by growing vines in pots; but apples, pears, and cherries, with plums and apricots, peaches and nectarines, would really be a great acquisition to London sight-seers if the plants could be brought out in healthy leaf.

Ferns.—Many of these are shown, but with the exception of *Lycopods* and a few others, I see no sort of use in crowding the tables with them. People are almost tired of Cape Heaths and large Pelargoniums, although the main supports of the shows. Who then will stretch his leathers to see what is the difference between this or that fern, when all the botanists in Europe, and everywhere else, are at loggerheads about what-is-what in a fern? Mr. Fortune's purplish and light-green Lycopod, *Cæsium*, is the prettiest thing in that class, and the climbing or true variety of it is really worth a dozen of the newest ferns ever seen; but all the Lycopods, and many of the small-leaved ferns, are very useful for fringing or otherwise mixing in nosegays, and for covering rockwork and borders in hothouses. All this useful garnishing is a very different thing from carving for the multitudes at public shows or festivals. D. Beaton.

WINTERING TENDER PLANTS IN ROOMS AND COLD PITS.

A few weeks ago an answer was given to an interesting letter of a correspondent on this subject in the usual column, with the promise shortly to revert to the matter more in detail. With a word or two of advice as to the formation of the pit, I once thought it would be better to leave the matter until the cold nights came to visit us, as it did not seem quite in character to be writing about *wintering* when we were broiling under something like a tropical sun; but two reasons have

decided me to the contrary. First, the unwillingness to keep a correspondent waiting so long; and secondly, the conviction that half of our mishaps proceed from not attending to the precepts of that worthy lady, *Mrs. Think-in-time;* joined to the confidence that the experience of our correspondent would not only operate as a safeguard against dangerous delays, but as an incentive to imitation by all those similarly circumstanced. Means for effecting certain results must of course be obtained; but in our own practice, and the tantalising failures of young beginners, I have found that *means* generally were not so deficient as the want of the *knowledge*, and, more frequently still, the *perseverance* to make the most of existing circumstances. That genius well knew what human resolution could accomplish who propounded the axiom, "Where there's a will there's a way."

But I cannot do better than introduce the statement and queries of our correspondent, all the more pleasing, and worthy of attention, as coming from our sister emerald isle. Amid the heat of party strifes, how cheering to find *everywhere* in the love of flowers (those gems that ever testify to the boundless beneficence of our common Creator), a public platform, on which all ranks, classes, and creeds may meet, and find their hearts fusing in kindliness, forbearance, and humane aspirations for each other. Our correspondent states, "as you once wished people who have no hothouses or greenhouses, to say how they succeeded in preserving plants through the winter, I will just mention what I have done in a small way, and beg at the same time some advice for next winter. In a room without a fire, but over a kitchen, with windows facing the south, I have preserved, in a most flourishing condition, old plants, and young rooted cuttings of the following flowers; no cuttings, according to your direction, being taken after the 1st of August, very little water being given during the winter months, but in February more and oftener, to all except the scarlet geraniums, which I wished to keep back until planted out." The plants were "*Geraniums, fancy and scarlet; Verbenas; scarlet Salvias; Lobelia ramosa; Ecremocarpus scaber; Heliotropium; Fuchsias; Hydrangeas.*" This is the statement, and instructive it is, proving that those who followed directions given in this work on room and window gardening, were following no Jack-with-the-lanthorn. The questions that follow are, therefore, well worthy of attention.

"1st. Was the treatment right?" Ask a schoolboy, surfeiting himself with plum-pudding, if he likes it? Success, in this case, is the best proof that your practice was right. There is one plant in which your success rather surprises me—the *Lobelia ramosa.* It is a ticklish customer to keep over the winter in such circumstances; so much so, that it is generally raised from seed in spring. While it lasts, from the size and beauty of the flowers, it is the most beautiful of that section of Lobelias. If you have preserved *ramosa*, either from cuttings, or seed sown in autumn, your success, in either case, has been great. The chief elements of success with the plants mentioned, &c., are, taking cuttings early, and having them established before winter; watering carefully during winter, and appropriating a room for the reception of the plants. This latter arrangement is far preferable to keeping them in the window-sills of sitting-rooms, where they are drawn from want of air at one time, and dried up by parching air at another. The room being placed over a kitchen was also a great advantage, as the cold would never become so intense, and air could always be given to counteract the heat. One or two more points should be attended to by beginners. 1st. The aspect was the best for growing plants, as more light and air could thus be given, and the more of each, the sturdier would the plants become. Many of them, such as scarlet *Salvia* (if *fulgens*), *Ecremocarpus*, *Fuchsia*, and *Hydrangea*, might be kept in a dormant state for months, even in a room with a north aspect; but when they commenced growing any other aspect would be preferable. 2nd. In very severe weather in winter, when it is necessary to exclude frost, by shutters, curtains, &c., be careful that the plants are kept cool and dry; no excitement to growth should ever be given, unless when there is light to consolidate the growth formed. Sometime ago, I was asked to give a rough estimate of the value of pot plants as between an out-going and in-coming tenant. I was amazed, not at the dozens, but hundreds of nice young plants in rooms, supported on tables, and every conceivable make-shift. In fact, the plants just looked *too nice*, from having too much juice about them. They were got up to please the eye of the buyer; but if the new owner had not been put on the right scent, as respects air and watering, not a tithe of them would have passed through the ordeal of the severe weather that followed; a dropsical, diseased, cold, bitter lot they would have been.

"2ndly. I live in the north of Ireland, in a very wet county, do you think a pit constructed in the following manner would be a good one for preserving plants in? A hollow nine-inch wall, bottom on a level with the ground, hardened, sprinkled with lime and rough charcoal (as we have no coal-ashes), covered with a frame and bass mats, and made under a beech hedge, if not hurtful, as I wish to keep more plants next winter." This was referred to in page 234. In addition, I may remark, that a tar bottom will render it firm, and prevent the damp rising; but then the bottom must slope, or you must be excessively careful in watering in winter, as the moisture cannot get down, but must be dissipated by evaporation. 2. The rough charcoal will beat everything else for setting the plants on. 3. The bottom of the pit would, in such circumstances, be better if from six to twelve inches *above* the surrounding level. 4. The hollow walls will be of vast service for keeping the interior of the pit *dry* and *warm.* 5. Causing the ground to slope all round from the walls of the pit, firming it, coating then with tar and gravel, will be another preservative against damp. 6. If the beech hedge is on the north or east side of your pit, and far enough from it for the roots never to interfere with the brick-work, it will be an advantage as shelter. 7. Tarpaulin, or even waterproofed strong calico, at 6d. per square yard, will answer better for covering than mats, and be much cheaper. A very small quantity of dry litter will keep out the hardest frost. Such covering will keep it dry, even when raining fast, and thus the great evil of damping be avoided. If you are anxious for neatness and ultimate economy, provide yourself with wooden shutters. You will find them exceedingly useful for protecting your things before planting out, after thinning them in the pit. 8. Give abundance of air in fine weather; keep the plants stationary and cool when shut up; make it, in fact, your object to *keep*, not to *grow*, during winter, and you will be quite as successful as you have been with your room in the house.

"3rdly. Will you state whether the annexed plants, in such circumstances, had best be kept in the house or pit?" We have kept them all in both such places, but the following will be found, taken with the remarks that follow, a suitable arrangement:—*In the room of the house:* Fancy and large florists' Geraniums, and young scarlet and variegated Geraniums for beds, different kinds of double Groundsel, Anagallis, Heliotrope, Cuphea, Verbena, Petunia, Alonsoa, Lobelia, of the small blue kinds, if kept over, best varieties of Phlox Drummondii, Mesembryanthemum, and Cactus,—these two last cannot be too dry, if they do not shrivel much. In such a place, Azaleas and Camellias might also be managed nicely, provided you could keep them close in

your pit when done flowering. Roots of the large scarlet Lobelia will keep admirably in such a place, and be turned into the pit in spring to grow. *For the pit*, the following will be easily kept: All kinds of old plants of scarlet Geraniums, young and old Penstemons, Fuchsias, Phloxes (hardier kinds), Hydrangeas, Alstrœmerias, Salvias (young or old plants, red or blue), Tropœolums (the tuberous kinds), cuttings of succulent ones, double or otherwise (best in the house), and, though last not least, the whole of the Calceolaria tribe. Large, blooming herbaceous kinds must have extra care to save them from damp; but a very dry place is also their ruin. All the shrubby kinds will take no harm, rather the reverse, if the dew stands on them the whole winter. Provided frost is shut out, they can hardly be kept too *airy, cool, and moist* for the winter season. Coddling is their ruin. I mean nice healthy young plants, not old ricketers. I shall now conclude with a few extra remarks:—

1. In a pit with a good depth of light soil, most of the things enumerated will do better pricked out than when kept in pots. For instance, young calceolarias might at first have two-and-a-half to three inches square. Old geraniums and fuchsias may be set in quite thickly by the heels, but, of course, must be thinned in spring. Plants, young and old, are thus kept in a more equal state, as respects temperature and moisture, than when in pots. Young plants must, however, be within a foot of the glass.

2. Many plants recommended to be kept in the room spoken of, or in a house where heat can be given, will do much better if *planted out* in such a pit. For instance, if not carefully watered, verbenas will get both fly and mildew. The healthiest ever I had were pricked out in a border, and lights laid over them; at cutting-getting-time in spring, these plants were 100 per cent. superior to those coddled in pots. To prick out these, however, they must be propagated about September, instead of the 1st of August, as otherwise they would get too large before winter, and take too much room.

3. Such convenience of a pit will enable you to dispense altogether with keeping many things as *stock* over the winter. For instance, there is all the pretty, dwarf, blue and white-flowering *Lobelias*, the best of which I presume to be the *Erinus maxima*. Now, there is a little trouble with all these, as they have got so much of the annual character about them. They seed freely; and, unless in rare varieties, the seed comes true to its variety. Whatever the number of the lights of your pit, you may easily, by rough, moveable, wooden divisions, make each light a separate pit. Suppose you shut off one light; a few barrow-loads of dung will put you in possession of a little hotbed, and there you may sow your lobelias in March, and by pricking out, obtain them, and many things besides, *strong* for planting out in May, and with less trouble than you could attend to cuttings all the winter through. Such a pit, however small, may thus, with management, be made a hot pit or a cold pit, a growing pit or a resting pit, a close pit or an airy pit, a pit which will be a palace for the healthy and an hospital for the sick and diseased. R. Fish.

CONIFERÆ.

(*Continued from page* 244.)

SECTION 2.

An Alphabetical Catalogue of Species.—This will include the average height, habit, and uses, as timber, as resin-producing trees, as food, as fuel, and as objects of ornament to the lawn or park.

Abies.—The word Abies is derived from *abeo*, to rise, alluding to the habit of trees which are rising or aspiring. It is a numerous group, and is distinguished from *Pinus* by the cones being pendant and more scattered, by the leaves being solitary, not so much clustered, and generally in two rows. The greater part of the species thrive best on an elevated site, and will flourish on poor, thin soils; but some do well even in low valleys. Many are useful as timber; the *Abies excelsa*, for instance, which largely supplies the "deal" of commerce.

A. alba (White Spruce Fir).—Native of Canada and the most northern parts of America, having been found by Dr. Richardson within a few miles of the arctic circle; hence it is perfectly hardy. Its average height is from forty to fifty feet. It has a pyramidal habit, forming a handsome single tree. The wood is light and elastic, produces resin in moderate quantity, and is excellent as fuel. In cold, bleak situations, where almost no other tree will grow, this cold-enduring tree may be planted with the best effect as a shelter to more tender Conifers, and as an ornament to the grounds.

A. Brunoniana, syn. *dumosa* (Bushy Alpine Spruce Fir).—Native of the hilly parts of Nepaul. Average height, seventy to eighty feet. This is a truly elegant species, of a drooping habit, bearing in that respect some resemblance to the Hemlock Spruce, but is more beautiful than that species, inasmuch as the leaves are of a silvery appearance on the under side, contrasting beautifully with the dark green on the upper side. Being but lately introduced, we are not in possession of knowledge as to the uses to which it may be applied, but as an ornamental tree there are few that surpass it. It has stood the vicissitudes of our climate, at least in the southern counties, so far.

A. Canadensis (Hemlock Spruce Fir, or Canadian Pine).—Average height, seventy to eighty feet. This beautiful tree is well known and justly admired in this country. Its habit is a graceful drooping tree, and so dense is the foliage that the limbs are frequently broken by the weight of the snow they retain upon them. Uses: As a timber tree the wood is too brittle, but it makes excellent fuel; and the tanning principle is so strong, that the tree is highly valued in its native land for tanning leather, though we never knew it tried in this country. Its chief use here is to ornament our lawns and plantations, which purpose it answers admirably; but to display its peculiar beauty it should stand alone; its branches will then descend and cover the ground completely. It is perfectly hardy, though it loves to be sheltered from strong hurricanes of wind.

A. Douglassii (Mr. Douglas's Spruce Fir).—Native of the north-west coast of America; average height, one hundred to one hundred and fifty feet. This is undoubtedly the most beautiful of all the American Spruce Firs. It is named in honour of the late Mr. David Douglas, who was for many years collector to the Horticultural Society of London. Through his persevering labours great numbers of the firs and pines, as well as other things that are now ornamenting our gardens, were introduced. The habit of this most beautiful Conifer is upright and spreading; the foliage is of a brilliant green, even through winter; thus rendering it a plant to be desired wherever there is space to plant it. It grows very rapidly, and is perfectly hardy in all parts of Great Britain, excepting on the tops of bleak mountains, and the sea coast. As a timber tree it is invaluable, the wood being firm, close-grained, and heavy, and not at all inclined to warp. It does not yield much resin, but the branches and spray burn freely. The price the plants sell at at present, however, precludes all hope of planting it out as a forest-tree. Its chief use, then, is as an object of ornament. In our last, we mentioned a fine example at Rolleston Hall, in Derbyshire. There is also a good example in the grounds of the London Horticultural Society, and several others in various parts of the country.

A. excelsa (Lofty, or Norway, Spruce Fir).—Native

of the North of Europe. Average height, eighty to one hundred feet. This is the common spruce fir of our woods and plantations, and whoever has travelled through Derbyshire, near Chatsworth, must have been struck with the density of the plantations of this fine ornamental tree. For such situations, by the sides of mountains, no tree is more useful, both for shelter, shade, and as an object of ornament. We lately visited that region. The spruce firs were then making their summer growth, and nothing could be more pleasant to the eye than the delightful freshness of their newly-made shoots and leaves. We remember, many years ago, botanising at the top of Airdale about the same season of the year. The hills are there near some gentlemen's seats, clothed with this fine tree to a considerable extent, and were beautiful in the highest degree. No doubt many of our readers will remember similar scenes in various parts of Great Britain and Ireland. The habit of this useful tree is, as is well known, of a pyramidal form; and when a single tree stands alone it forms a truly noble object. Its trunk is then clothed down to the ground with its elegant branches, and it forms an upright symmetrical towering pyramid. With the single exception of the oak, there is no tree grown so extensively in Europe as this, and none more useful. With the above exception, its timber is the most valuable, whether used as beams and boards for building, and various other purposes, or for producing resin and turpentine, or as fuel. It is a great national treasure upon the otherwise barren mountains of the North of Europe; in truth, the uses to which it is applied might fill a volume. It is so hardy that it will thrive upon our highest mountains, and, therefore, ought to be planted in such situations most extensively in conjunction with the larch. For mere ornamental purposes it is, perhaps, too common; but in peculiar situations, such as by a walk in romantic dells in hilly regions, where few others would thrive, this fir would fill up such a situation with the best effect; and also planted in groups of three or five in a park, in more gentle scenes, they would add greatly to the scenic effect; also as a nurse for more tender Conifers this would be invaluable.

There are several varieties of this fir, the most important of which is the *A. excelsa nigra* (Black-leaved Spruce Fir, or Red Fir of Norway).—Native of the north of Europe and America. Average height, seventy to eighty feet. Excepting in the dark colour of the leaves, and their being somewhat shorter, there is not much difference between them. It seems our botanists do not consider these differences of sufficient importance to constitute this a distinct species; yet they both come from true seed! In all other respects they are equal, both as timber, and in usefulness to man. The wood of this variety has a reddish cast, hence it is called red deal, and the Canadians prefer it for making the famous, useful, and medicinal liquor called spruce beer. *A. excelsa carpatica.*—From the Carpathian Mountains; a tree of considerable dimensions and beauty. *A. excelsa pendula* (Weeping Spruce Fir).—An elegant tree for ornament; there is a variety with variegated leaves. *A. excelsa gigantea* (Giant Spruce Fir).—An accidental variety of rather stronger growth. *A. excelsa tenuifolia* (Slender-leaved Spruce Fir).—A garden variety, but very handsome. *A. excelsa monstrosa* (Monstrous Spruce Fir).—A variety with branches that form cockscomb shapes; curious enough. *A. excelsa Clanbrasiliana* (Lord Clanbrasil's Spruce Fir).—A very dwarf, dense bush. We have seen one twenty years old, and in a favourable soil, that was only five feet high, but nearly as much through; suitable for a small place, or near the walk of the pinetum. *A. excelsa pygmea* (Dwarf Spruce Fir).—This is still less in its growth than the preceding one. There is an example in the gardens at Kew, not a foot-and-half high, that is near forty years old. If it could be raised freely from cuttings it would make a characteristic edging to the walks of a pinetum. There are other two pygmy firs named *elegans* and *concinna*. The whole would be useful as rock plants in a woodland scene.

A. Jezoensis (Jezo Spruce Fir).—Average height, fifty to sixty feet. Native of the Japanese Mountains. This fine species has been lately introduced, but it appears likely to be quite hardy in this country. The leaves are of two ranks, and are said to be very persistent, that is, evergreen for seven years before they drop off. The cones are six or seven inches long, and have at the base of the scales a short bract, differing in that respect from all others of this genus. Its uses, unfortunately, we know little of as yet; but hope to see it grown extensively till they are found out. It is as yet very scarce.

A. Khutrow (Khutrow Spruce Fir; syns. *A. Smithiana, Pinus Morinda, A. Morinda*).—Native of Nepaul. Average height, sixty to eighty feet. A very beautiful species. We alluded to it as an instance of a Conifer bearing, in a degree, the smoke of London, and described two specimens in the Regent's Park; that description must have satisfied our readers that it is a beautiful tree. It is, when of a moderate size, of a drooping habit, though it varies slightly in that respect, some individuals drooping more than others; by drooping, we do not mean weeping like the weeping ash or elm, but more like the weeping willow, which, though the branches droop or hang down, yet the central shoot gradually acquires an upright position. The Deodar cedar is an example of a drooping character. We are not aware of any especial use that this species possesses more than those common to the whole tribe. The timber appears to be soft and light, and, therefore, will make any article not requiring much strength, and for fuel, like all resinous-bearing trees, it is excellent. As an ornamental object there are not many that surpass it, therefore it ought to be in every pinetum, or even in any pleasure-ground where there is space for it. To preserve the beauty of its drooping character, it should stand clear of the drip or shade of any other tree.

A. Menziesii (Mr. Menzie's, or the Warted-branched Spruce Fir).—Native of North California. Average height, sixty to seventy feet. This handsome species forms a pyramidal-shaped tree, with tiers of branches regularly encircling the stem. The branches are covered with warts, or tubercles; leaves, very numerous, with the under side distinctly marked with silver lines. Uses unknown, excepting as an ornamental tree; the singularity in its warted branches, and its silver-marked leaves, render it a desirable tree to every collection. It is very hardy, growing with great vigour even on the moors of Scotland.

A. nigra (American Black Spruce Fir).—Native of North America, from Canada to Carolina. Average height, seventy to eighty feet. Upright pyramidal, with horizontal branches; leaves solitary, four-sided, thickly placed upon the shoots, persistent. A very common tree in its native localities, but not a favourite among English planters, on account of a kind of aphides that effects and destroys both branches and roots. Our mild climate in winter may have something to do with this disease. The frost is so severe in North America that no insect can exist through it, whilst here they can live and bear our winter with impunity. Its uses are the same as *A. alba*. As an ornamental tree, when it thrives, it is very desirable, from the contrast the colour of the leaves give to the lighter green of the other species.

A. orientalis (Oriental or Eastern Spruce Fir).—Native of the mountains of Taurus and Caucasus. Average height unknown. Habit upright, with spreading branches. Rare.

A. rubra (Red Spruce Fir of Newfoundland, or

Red Pine).—Native country, Nova Scotia and about Hudson's Bay. Average height, seventy to eighty feet. Habit: the same as *A. nigra*, excepting the leaves are of a bright green. This is a very useful and valuable tree in its native country, yielding fine, sound timber, useful in various ways. This timber is a great rival to what are called the Baltic deals, which are formed principally of the *A. excelsa* (Norway Spruce Fir). Like that tree, it is very ornamental, even in the highest-dressed ground, and is quite as hardy. T. Appleby.

(*To be continued.*)

INFLUENCE OF DRY WEATHER ON CROPS.

It cannot have escaped the notice of the most careless observer how fast all nature's operations are hastened on during a period of hot, dry weather. It may be true, that the scorched-up soil denies the thirsty plant those generous juices requisite to augment its vegetable bulk in the same proportion as it did in a moister atmosphere, yet it affords it sufficient nourishment to hasten on to its ultimate destination—that of producing seed for a future progeny. That the present season has been equally fruitful in these premature ripenings, we believe all who have had a dry, hungry soil, in a hot situation, will give evidence; as the many reports we have heard of the extraordinary heat of the early part of this month must have told on the vegetable as well as the animal creation; and it is no unusual thing to find those, who, at other times, display great energy and activity, giving way to the relaxing influence of unclouded sunshine, when the thermometer, instead of themselves, attains the unusual period of four-score and upwards. Now, though nature, unassisted, does wonders, still, if there is a time in which our aid is more necessary than at any other, it is when the rapid progress of every thing threatens that some or other of them will attain a premature ripeness, from the fact of their being in so crowded a condition as to have to struggle with each other for the little food which the earth is capable of supplying them with. A bed of *Lettuces* forms a very good example of this, allowed to remain where sown and unthinned, the outside plants are the only ones that become of any size, while the centre ones, stifling each other, speedily terminate their existence, without ever reaching a state of maturity at all approaching perfection.

Now, Lettuces are not the only sufferers in dry, hot weather. We have sometimes been pained to see crops that had passed the stage of usefulness, left to tyrannize over a struggling young brood of something else, destined to become the occupants of the plot. This is too often the case when a mixture of crops takes place. We have said, elsewhere, that we are not friendly, in a general way, to the mixing of crops; yet we often plant *Brocoli*, &c., between rows of Peas, in such a way as to occupy the whole ground when the latter are removed, and most of the summer crops of Peas are cleared away in time for the Brocoli to strengthen before the hard weather of autumn sets in; but the latest sowings of Peas have all the space to themselves, they being expected to continue in bearing until the growing season is about over. But referring again to struggling crops, how often do we see *Spinach* running to seed to the detriment of a neighbouring crop; *Turnips* of the early sort, perhaps the same; and *Radishes*, which are often a sort of catch-crop, are sometimes overlooked, until they are able to look over the cultivator. These are sad robbers of the soil; rooting deeper than many other things, they extract from the soil that moisture which ought to have been withdrawn by capillary attraction, to supply the wants of some less robust family living nearer the surface.

Having said sufficient in condemnation of superfluous crops occupying the ground, let us turn to the more legitimate ones, and see in what way they can be benefited during this dry weather. Salutary waterings will be of service to all gross feeders, and still more so if that water be impregnated with some stimulating matter. *Liquid manure* will now be of infinite service, and the cultivator will do well to treat his advancing *Celery* with occasional doses of it, and the morning after to crumble a little earth over the ground so watered, which will check undue evaporation, as well as prevent that hardening and cracking of the surface so common after repeated waterings in dry weather. Ridge *Cucumbers*, *Cauliflowers*, *Lettuces*, and many other crops, will be equally benefited by this seasonable liberality, while *Tomatoes*, *Chillies*, and perhaps *Scarlet Runner Beans*, would be as well without it, unless in very dry situations, where atmospheric or artificial moisture forms the only food they have to live upon; but such situations are exceptions to the general rule, and in most gardens the last-named articles become more robust than fruitful, for the hot, dry weather (so congenial to them in their native habitats) is not likely to be equalled in this country to an extent hurtful to their welfare; but, in a usual way, nature points out what, and what not requires our aid; the stunted growth of a vegetable in that period of its existence, when its progress ought not on any account to be arrested, is itself apparent to every one as being in need of nourishment suitable to its wants.

Next to watering growing crops, *Shade* is required to arrest undue evaporation, and in case of newly planted-out things this is still more necessary, as the scorching sun of the dog-days would withdraw more of the juices of the lately-disturbed vegetable than it could well spare. Where it becomes a matter of necessity to plant in dry weather—and it very often is so—utility must be consulted rather than appearances; we say, therefore, shade by all means, if in ever so humble a way. The object may be attained the same by a sprinkling of the haulm of peas over *a newly-sown bed*, as if the same were covered with slight canvass, or fine linen—certainly, the one would look better than the other at the moment. A slight shade is also necessary to *plants which have been pricked-out* to strengthen on a nursery bed; and, in fact, most plants which have not tissues to ripen for another year's use seem more at home when slightly shaded, or, shall we say, protected, from the fine rays of sunshine at this season of the year.

Many things will now require to be sown and planted; but as we propose to devote our next week's article exclusively to calendarial matters, we only now remind the amateur to sow, without delay, a little of the best kind of *Early Cabbage*, some *Lettuce*, and *Endive*, and to plant out a good breadth of the latter, if favourable weather occurs. *Brocoli* may yet be planted, but we expect the various kinds of greens, &c., to have been in some time ago. *Turnips* may also be sown for winter use, and advancing crops of the same thinned, and otherwise attended to; and a sharp look out kept that weeds, sheltered by tall crops, do not sometimes adroitly escape notice, ripen their seed, and lay the foundation for future annoyance. J. Robson.

ALLOTMENT FARMING.—August.

We have now arrived at that part of the year in which almost every crop is in possession of its full digestive powers, more especially the root crops, and henceforward they should be so situated as to be enabled to enjoy a full share of light, for on this depends both their bulk and nutritious properties at housing time. The latter is a point but too often lost sight of; how frequently do we see plots—yea, extensive fields—of such things as the swede, or other

turnip, half smothered in weeds until the approach of autumn, the owner apparently as ignorant of the facts above suggested as though he had been bred in the back woods. This is truly a disgrace to the English farming character, and could only be justified in such parts as Australia, where agricultural labourers are a scarce article. If any one doubts the importance of a free admission of light as to its bearing on the *qualities* of vegetables and roots, let him test their feeding properties for a week or two, or let him toss a handful of potatoes to the pigs, part grown beneath the shade of trees, and part from high and dry upland soil, with nothing but the sky overhead, and see which the hog will select. But, if any doubt could possibly exist here, surely there can be none as to bulk of crop. It would not be extravagant to affirm, that a coarse crop of weeds permitted to run out with any crop, will abstract twenty per cent. from its value, that is to say, fifteen per cent. for soil robbery, and five per cent. for the baneful influences of shade. Let us express a hope, therefore, that these admonitions will come home to the negligent allotment holder, and that he will at once muster courage to pull every weed from his crops, at this period especially.

Thinning Processes.—In all root crops, if handled according to our advice, there will be a good deal of thinnings coming to hand in the course of July and up to the middle of August. These thinnings are the consequence of reserving a portion extra, in order to provide against casualties, such as the depredations of insects, birds, and such diseases as the canker, &c. Such thinnings are of immense importance in the house economy; and we do think a cottager's wife would be justified in looking very cross at her husband if he did not bring home a bundle of such things as carrots and parsnips every evening from the end of June to the middle of August. But not only may the bairns partake of such things, which, in their young state, make a capital soup with a bit of bacon, but some surplus thinnings should be obtained for the pig; and, indeed, in all such crops there are what are termed "bolters," and other coarse-necked plants, which should be collected.

Gaps.—These, of course, were planted in July with cabbages, swedes, &c. A little care is necessary at first to get these a start; weeds must be kept away, and sometimes a stray leaf or two from the original crop plucked away and given to the pig. Care, however, must be taken not to trample on the crop; this must not be allowed.

General Cultural Processes.—Such at this time will consist chiefly in the free use of the hoe during dry periods, and the spade during wet ones. We are aware that the latter tool cannot, at this advanced period, be used among *all crops*, we merely urge that where cleaning processes become necessary, and the spade *can* be introduced, it is by far a more efficient weapon than the hoe, which demands a rake to follow it, at least, in all uncertain periods. We have a practice of this kind we term "pointing in," and it consists in slipping the spade in almost horizontally, and in doing so, the foot is not applied to the "tread" of the spade, but the knee is substituted. This is an old gardening practice, and by it a man will go over twice the ground as in ordinary digging, and bury the weeds efficiently.

Hand-weeding.—In all weeding after this period, beware of treading on and mangling the leaves of existing crops; too much care cannot be exercised.

Potatoes.—This has been a splendid season in the early potato way in these parts; but at the time we write (July 18th), the disease has commenced in the foliage, and is becoming pretty general. Let us repeat former advice concerning the careful selection and preservation of seed for the ensuing year. Let those from very early crops be selected; and as to soils, where a choice exists, obtain your seed from high, dry, and sunny situations. Seed should never be selected from rich soils, nor from crowded allotment plots, neither from shaded situations. We grow our potatoes *specially* for seed, and would fain persuade the country at large to do the same. We select the driest and poorest plot, throw four-feet beds up, nine inches above the ordinary level, and dibble small whole potatoes in, at about one foot apart; the produce is a profusion of small potatoes, about the size of the seed, which are reserved to be planted whole. By this practice we have no large potatoes; and the soil being poor and totally free from manure, the produce is small, hard, heavy, and rough-coated, all which are guarantees of hardihood in the succeeding year. Select, then, betimes for seed, and spread it out on any cold, shady floor, not more than two potatoes deep, if possible; and in a month's time let them be turned, in order to green them equally. In the beginning of October they may be pitted, if necessary, on a high, dry, and shady bank, and remain so until the beginning of February, when they should be taken out and placed on a room floor, safe from the frost. Such is annually our practice with most of the kinds, and we are exceedingly successful. In pitting, however—a practice we only recommend on the score of labour-saving and safety—care must be taken to keep them in a narrow body, in no part more than half-a-yard through.

Turnips.—We here beg to recommend to the allotment man, and, indeed, to everybody, a new turnip which has appeared in these parts during the last two years, called the "*Orange Jelly.*" This has been given to the public by Mr. Chivas, Seedsman, Chester, who grows an immense stock for the agriculturists; they are beginning to find its value. To allotment holders, it is of equal importance, as combining all that is requisite, viz., heavy cropping, short tops, and a peculiarly rich flavour and pulpy flesh. As we had some doubts of its earliness, we this spring tried a plot against the Early Dutch and Stone, a pretty good test, and it beat them hollow; and as for flavour and texture, there is no comparison. We were shown a field by Dr. Brindley, in April, which the Doctor said was sown in the second week of September last, and, strange to say, had produced at that late period a crop large as good-sized cricket-balls, and which had stood the winter in style. This is a great boon to those who want to crop very late; for at that period most of our other kinds would be nothing but foliage. The allottee may sow some by all means, if he can get at it, for his family's use as well as for the pig. Swedes will require general cultural practice; and we beg to remind the class of readers for whom we write, that mildew, so common to the swede, is the effect of a torpid root-action. Torpidity may be induced various ways: drought, stagnation through heavy storms, acting mechanically on soils naturally stubborn; or an early and forced plant through the agency of quick-acting manures now become deficient in moisture; such and other causes, singly or combined, lead the way to mildew. Those who have but small plots should apply liquid-manure the moment it threatens.

Mangold, Carrots, Parsnips, &c., will require to be thoroughly cleared from weeds; and, as observed of other roots a good deal of useful thinnings should by this have found their way to the cottager's house.

Cabbages.—Wherever cabbages are standing uncut, and they are intended to produce sprouts after cutting for the winter, the heads should be cut and worked-up for some purpose. If the cutting of the summer's cabbage is finished by the middle of August, the stems will produce a full crop of useful sprouts to face the winter with; indeed, many will produce nice-sized cabbages. Opportunities, therefore, should be seized of getting the store pig on by such means. When all are cut, the ground should be thoroughly cleaned and deeply-hoed through, drawing a little soil up their stems. Some of the dwarf kinds should be sown in the middle of the month, to be pricked out for the winter.

Lettuces.—A little of the Ady's Cos, the Bath Cos, and the Hammersmith Hardy Green, may be sown at twice; one lot about the 10th to prick out, and a second about the 24th to remain in the seed-bed.

Onions.—By the middle of the month, the onions may be bent down, in order to hasten their ripening, for we shall expect to hear of a good crop of Coleworts, from the June sowing, being produced where the onions stood. This is our practice every year.

Greens for Winter and Spring.—Those who have delayed planting these things must lay hold of the old maxim—"better late than never;" these things are so valuable to the housewife, that it becomes an imperative duty, as well as a high point of interest, to provide them. Every nook must be searched, every crop scanned, to see if advantage can be taken to get some in. Savoys we do not advise planted late; green kale is the most generally useful at a late period, and plenty of dwarf cabbages, as Coleworts.

The Pig.—Now is the time to push on the store pig at a

cheap rate. But little purchased material will be necessary for some time. The thinnings of the allotment, with some Indian corn meal, oat, or barley meal, &c., to correct a loose habit, engendered by the free use of green materials, will be found a sure economy. As to the purchase of meals, we are not sure how this matter rests. We have been pig-feeders some twenty-five years, and have tried all the meals. Bran, here, is too dear for its quality. Indian corn meal has been the greatest favourite of late in these parts; perhaps owing to its comparative cheapness, generally from 15s. to 18s. per load, of 240 lbs., and it is a truly good thing. Barley meal is too well known to need description—always a good pig food; pork flavour is understood to be of a capital character from this food. Oatmeal makes a capital gruel for young pigs, where a breeding sow is kept; it remains suspended where barley meal would sink. Beans should be used with caution, and should be well cooked; they are rather apt to swell and produce constipated bowels. However, districts differ; people must be in part ruled by the neighbourhood they live in. Now that the direful potato disease has set in again with a virulent appearance (?), favoured by high atmospheric conditions, we fear that many broad acres will go to the swine and other stock, and in that event they will take the place of meal up to feeding-time. We have a good deal to say about breeding sows, as well as store pigs; and these things, with the cow, must pass on to future papers. R. Errington.

THE APIARIAN'S CALENDAR.—August.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide."

The Season.—The honey-gathering season this year has been a most extraordinary one. Continued rains during the usual time of swarming, so that up to the end of June very little or no honey was stored; and, indeed, many stocks were lighter at that time than they were in April. Bees, in such a season as this has been, will be subject to all sorts of vagaries; and owing to the continued succession of rainy weather during part of May, and nearly the whole of June, which has proved an obstacle to swarming, no doubt many embryo queens were destroyed, and thus prime swarms as well as after-swarming was put a stop to. Since the hot weather of July has set in honey-gathering has gone on rapidly, and much of fine quality has been stored in the supers; but from the unusually high temperature it is feared that its duration will be but short, and that the hot weather will dry up all the flowers, as the wet washed their predecessors away.

Melted Combs.—Complaints are reaching me of the combs of early swarms having been melted by the heat of the sun. Shading should always be had recourse to in such weather as that of the middle of this July, and more especially so for swarms of the year. In those cases where it has unfortunately taken place, it will be better to shade immediately, and nothing more, leaving the rest that is to be done entirely to the bees.

Additional Room.—Although the time for swarming may be considered past, yet, where bees are seen to persist in clustering outside the hive, additional room should be afforded them; but whatever kind of super is added, it should not exceed in depth four or five inches at the most, at this advanced period of the honey season.

Transporting Hives.—I should imagine that after such a season as this, and in the prospect of a fine autumn, every person whose locality admits of it will embrace the opportunity of sending his hives to the moors. The advantages must be incalculable; not only in the quantity, but in the delicious quality of the honey there obtained. I can almost fancy, while writing, that I have its delicious flavour on my palate.

Taking off Glasses of Honey.—Some persons, I doubt not, are beginning to be anxious to possess themselves of a few glasses of honey from their bees. If the combs are sealed up they may be taken, but I would recommend every one who attempts it during hot weather to be more than commonly careful how they remove them, or the combs will fall out.

WHAT BREED OF POULTRY IS LIKELY TO PROVE MOST PROFITABLE TO THE FARMER AND COTTAGER?

This, after all, is the main question, for the solution of which we must look to the now rapidly increasing poultry exhibitions, since it is evident, that the public interest and support that has been so extensively accorded to these societies can only be maintained by such practical evidence of the benefits wrought by them for the above classes.

It is, indeed, more than probable, that without the skill and outlay that in the beginning was so liberally bestowed on poultry matters by amateurs and fanciers, general attention would not have been sufficiently drawn to this subject, nor would such acquisitions of really pure and valuable breeds of poultry have been effected as now encourage the efforts of the farmer and cottager, who possess the means of keeping a few fowls, to replace the comparatively unprofitable barn-door, or other mongrel races, with birds whose excellence and merits have been well tested and thoroughly proved.

Following the Birmingham classification, let us commence with the *Spanish*, for which I can now venture to say but little for the purpose we have in view. Their present price alone would indeed be as yet a bar, for really good specimens will readily sell from two guineas to three guineas per pair. They are, certainly, very beautiful birds, laying a large number of eggs, but difficult both to hatch and rear, and requiring greater care and attention than would be consistent with a profitable return. Whenever their price may become more moderate, they will doubtless be sought after where eggs can be profitably disposed of.

With regard to *Dorkings*, I feel much hesitation in speaking of their comparative merits, so many excellent judges and skilled poultry-keepers thinking so far more highly of them than I as yet am disposed to do. But bearing in mind that this breed has not been as yet commonly kept in this county (Cornwall), it is not unlikely that their good qualities may appear to better advantage when we know more of them. Of several very fine specimens sent down by Mr. Baillie, of Mount-street, Grosvenor-square, and other known judges, the chickens have not shown such rapid growth and hardy constitutions as would give them pre-eminence over other breeds. As regards eggs, I have not found them by any means remarkable layers; and the young chickens are not unfrequently found so weak in the shell as to require assistance. Judging from the account given of the Dorkings in the best works on poultry, it would seem that there is often great delicacy of constitution, and that it is only by the constant judicious intermixture of fresh blood that degeneracy is avoided. I last year was in possession of some good specimens of white Dorkings, my experience of which would lead me to this same conclusion; and only last week I hatched a nest of grey Dorkings, all of which, but one, required assistance in emerging from the shell, though hatched by a hen remarkable for her excellence as a sitter. My neighbours, who are poultry-keepers, give me the same account; but it is very possible that others may form a different estimate of their merits, and that I may be mistaken in thus questioning their fitness for the general purposes of the poultry-keeper.

We now come to the *Cochin-Chinas*, a race, judging from imported specimens, containing several varieties. In the view we are now taking we shall have to lay aside all points which are merely matters of taste to the fanciers of these fine birds. For instance: the pale buff and fawn colours, at present so much coveted, would be the last I should recommend for the purposes of profit, since it seems that the darker birds not only possess a more vigorous habit, but also attain a much greater weight. Of some hundreds of young birds, bred by different persons, that I have lately seen, the dark red and partridge-coloured cockerels are many of them from five pounds to six pounds in weight—a size I have not seen attained by any of the lighter colours at the same age. The white Cochin-Chinas are, indeed, splendid birds, of robust shape, and, as I believe (never having had any in my own possession), equally hardy with the others; but from their present value it must be some time before they can be generally obtainable by the classes for whose information these observations are made.

The points of excellence, in an economical view, of the Cochin-China race, are as follows. They are excellent layers —pure bred birds will generally lay from 30 to 35 eggs before wanting to sit—they are good mothers while with their chickens, and recommence laying one month after hatching, though generally remaining with their young ones for a week or ten days after beginning to lay. On this account it would not answer to let Cochin-China hens hatch their own eggs very early in the year, as the young ones might then be too soon left without the warmth and protection of the mother; but for this purpose, were very early chickens desired, a few Dorking or game hens might be kept, and the Cochin-Chinas, when wanting to sit, might be put upon goose or ducks' eggs, for which, from their large size, they would be well fitted. For ducklings, a very short attendance from the mother is all that is required, as is seen in the vale of Aylesbury, where they are usually taken away as soon as hatched, and brought up by hand; the hens would then recommence laying almost immediately. The middle of April is quite soon enough for hatching Cochin-Chinas, nor have I ever observed anything gained at the following Christmas, either in size or otherwise, by hatching them before that time. With a short interval at moulting, I find they lay the whole year round, and a supply of young pullets would therefore afford eggs even at the time when the old ones cease laying. They hatch readily, and the young ones are at least as hardy as those of any other fowl that I am acquainted with. During the recent cold, wet weather they have done well, when Polands, Hamburghs, and Dorkings, have had their numbers sadly thinned.

Now as to the age at which they will be fit for market. At four months old there should be no difficulty, under ordinary circumstances—as to a good run and fair feeding—in getting the pullets to three-and-a-half pounds, and the cockerels to five pounds, live weight; and, by being then cooped, a still larger amount of flesh can be easily and profitably laid on. I am inclined to doubt whether any other breed of fowls can attain their weights at so early an age, or give so quick a return: as to the *quality* of their flesh, when properly fed, it need only be tasted to be appreciated.

But, as I before observed, there are several distinct varieties even of imported birds. For my own part, I am inclined to give the preference to those of a medium size, deep in the breast, broad across the back, and *with short legs*. Length of leg, indeed, appears to me to be a fault against which breeders must carefully guard, as deteriorating both from the appearance of the live bird, as also, when, in due course, he is placed upon the table. I should here observe that at all periods of their age, rice boiled and kept well stirred for six minutes, so that the grains are separate one from another, should form a portion of their food; it seems especially useful to them when young. I do not think that they are large consumers of food; and, from their quiet disposition and stay-at-home habits, a less quantity would of course profit them more than the same to fowls of a rambling habit; and, in almost every instance, it would be a great recommendation that the lowest fence is sufficient to restrain their wanderings.

But I know what will now occur to many of your readers. "Granted," say they, "that these Cochin-Chinas are very profitable, and answer this description; but look at their present price! How is the *farmer*—to say nothing of the *cottager*—to procure his stock?" No doubt Cochin-Chinas are selling at very high prices, as instance the account of some recent sales in The Cottage Gardener; but these, it should be remembered, are choice show birds, bred from prize parents, the high value of which turns probably on some favourite colour, or remarkable beauty of shape. The darker and partridge-coloured birds may generally be obtained for very reasonable terms; and while the favourite colours retain their large, but, when the original cost and risk is considered, *not excessive* price, others, in every way suitable for the purposes I have been speaking of, will, I believe, be this year attainable in most localities at a price varying from 5s. to 10s. each. Thus, when we bear in mind that a large yard may be amply stocked by a single pair of birds in one season, I do not think that price can long hinder their general adoption by the farmer. The cottager, again, to whom even this amount may be an obstacle, may purchase eggs of his more fortunate neighbour, or another year obtain his birds at a still lower rate, supposing he is altogether unable to procure the means of such a present purchase as would hold out the prospect of a remunerative sale for his young birds; for seldom are better specimens of poultry to be had than those reared in a cottage, where the knowledge of their ultimate value, either to keep or sell, would ensure them full care and attention.

But I must now turn to other members of the poultry-yard, lest I incur the charge of favouritism; yet, after all, I believe that the question at the head of this paper would truly find its answer here, notwithstanding all that may be said of many other excellent breeds—the *Malay*, for example, which stands next on our list, but which appears to be receding in public estimation since the introduction of their oriental neighbours, the Cochin-Chinas. Their general fault is an inordinate length of leg; some that I remember seeing at Falmouth, where they were formerly landed in considerable numbers from our homeward-bound East Indiamen, would have been justly, in this respect, called *ostrich fowls;* but of late years much better specimens have been introduced, of which there were good examples shown as Chittagongs at Cheltenham; but I believe it may be fairly said, that, whatever advantages they possess, they are, at any rate as regards the present enquiry, at least equalled by the Cochin-Chinas.

But what shall we say for that most beautiful bird the English *Game fowl?* Little, I fear, for their profit, as regards the market, however useful the hens may prove as mothers to other chickens, provided their disposition be tolerably quiescent; but this is a quality seldom found to be the case even in young chickens, still less so in mature birds even of the fair sex; and they are certainly not in the first class as layers. The Indian game fowls, which are often seen in this country, are handsome birds, especially the white ones; but I have never heard of their possessing any advantage over our native breed.

Next come the *Hamburghs*, gold and silver-pencilled and spangled, all of them very good layers, and rarely wishing to sit, easily reared, and attaining a fair average size. Wherever eggs, rather than chickens, are in demand, few birds would pay better than these, and good specimens may generally be had at from 4s. to 5s. each. A silver-spangled Hamburgh, belonging to a gentleman in this parish, has laid 91 eggs from the 22nd of February to July 12th, in the present year. The different varieties appear to be equally commendable, although a greater preference is often shown to the silver, probably from the greater elegance of their appearance.

What claim can the *Polish* fowl advance to the distinction in question? Admirer, as I certainly am, of this most graceful bird, I cannot put it in competition with others that have been enumerated; for although the hens lay well, and the chickens are probably unrivalled when properly fed, they are, it must be allowed, of delicate constitution and slow growth, as is evidenced by their continuing to increase in size for two or even three years.

Here, then, our list closes, as probably also the patience of our reader; for *bantams*, the *rumpless*, the *frizzled*, and the *silk* fowls, however interesting to the amateur and fancier, are not at present before us, nor probably are they ever likely to be so, although the white silk fowl is said, on good authority, to be distinguished in India for its excellence for the table,—certainly those I now have keep themselves in excellent condition, and have the largest and most constant appetites of any fowls that I have hitherto noticed; I cannot, however, but regard their black skin as against them for this purpose. No birds, I should observe, sit better, or take greater care of their young.

In conclusion, I must repeat my belief, that the pure Cochin-China fowl (for unless of perfectly pure race, disappointment must inevitably follow), such as I have described him, is the bird to which precedence must be given by the cottager. Particular localities may be best occupied with a particular race of fowls, to which special circumstances may justly give a preference; but, on the whole, I firmly believe that Cochin-Chinas must eventually carry with them an acknowledged superiority, as regards the economy and profit of the poultry-yard.

May it not, in the same way, be a useful matter of inquiry, whether such *geese* as carried off the last Birmingham and Cheltenham prizes would not be more profitably kept than the ordinary specimens of the genus *Anser* which usually meet our eye? Not to forget that the *Rouen* and *Aylesbury ducks* constantly double the weight of those of plebeian pedigree; while, to go a step farther, in remembrance of the excellence of *Italian pigeons*, the Leghorn, and other varieties of the *Runt*, would probably, with benefit both to producer and consumer, succeed the skinny specimens that too commonly occupy our dovecotes.

To comprise, within proper limits, an answer to our question respecting so great a variety of birds as our poultry-yards now contain, much necessarily remains unsaid, although the principal points of merit, as regards their profitable management alone, enter into the question, and on these points alone precedence must be given. We can but speak of what falls under our own observation, and very possibly the greater experience of other poultry-keepers may lead them to a different conclusion. But under any circumstances, good must result from the inquiry, for by such comparisons only can a correct judgment be obtained. Hence the great value of our poultry exhibitions, which not only excite the attention of the public generally to our subject, but also collect the best specimens of each class, for the information of all those who may interest themselves on a subject which appears likely to take a far more prominent position in rural economy than would have been thought at all likely some few years since.—W. W. Wingfield, *Gulval Vicarage, Penzance.*

THE NO-BEARDS OF POLANDS.

"But is this law? Ay marry is it!"

It has been said, indeed I have myself "seen it in a book," that the golden and silver Polands should not have beards—that the beard is "a monstrous appendage," and that all Polands possessed of one "should be sent to the fatting coop." How many of my fellow-worldlings are ready to believe and to receive a thing as true and substantiated, on no better authority than that "they have seen it in a book."

No proof, however, has yet been adduced (nor can it be) that the beard of Polands is really "monstrous." It is, so far, a mere matter of dislike with one or two individuals. Woe be unto beards! from that of the he-goat and "bearded Pard," to that of the trim "lady-killer," or the smart chin of a modern beau!—"away"—"to the fatting-coop," says our author.

"An Marcus dixit? ita est."
"Did Marcus say 'twas fact? Then fact it is.
No truth so valid as one word of his!"

The very best authorities, however, as Mr. Vivian, Baker, &c., men of great experience, observation, and knowledge, tell me, that no really good and *true* bred gold or silver Poland is without the beard. Mr. Baker, being recently asked by a friend of mine, how it happened, that a few persons condemned the beard of Polands, significantly replied, "Ah, because *they* know nothing about it." This gentleman, whose experience and knowledge will hardly be doubted, writes me that, on the Continent (as in Holland, France, &c.), all the best, really pure, Polands have beards, and emphatically states his opinion that they should have.

My own experience and observation quite confirms this. I have recently had Polands from the Continent, Ireland, and other parts, and, in all cases, the beardless fowls were miserably inferior to the bearded ones—inferior both in carriage, plumage, and shape itself; their topknots being comparatively small, their necks thin and spare, their gait and deportment wanting in the pomp and circumstance of a fine and true Poland. Nay, so evident were these deficiencies, that, in every instance, I could at once select a bearded from a beardless Poland, where the throat itself was not visible.

Possessing at present both the bearded and the beardless sorts, I am impartial in my opinion; but, from observation and reflection, I feel convinced that the beard of gold and silver Polands is a natural, aye, and a really (in them) becoming appendage. It entirely comports with the *tout ensemble* of the Poland; it is in keeping with his magnificent topknot—with his large, full, thick, and long neck—his long flowing hackles—and with his general dashing and *debonnaire* deportment.

It is very highly probable that the beardless Poland is a crossed and mongrel bird, originally produced between the Poland and spangled Hamburgh; and, in colour of plumage, there is much similarity. A thorough-bred bearded Poland ever produces bearded progeny; out of forty chickens reared this year, all are bearded.

On looking over the chickens bred from beardless silver Polands, I find, that not a few of the cocks have *the double or rose comb of the spangled Hamburgh.* I have but just seen this, and surely it is "confirmation strong" of the opinion just expressed, that beardless Polands are a mongrel breed. Unfortunately, the really clever and excellent author alluded to himself oft acts as judge at our poultry shows, and has inoculated other judges with his dislike of bearded Polands; but these very judges were compelled to give the premiums, at Birmingham, to *bearded* Polands. Why? Because, as they confessed, they were so immeasurably superior to the

"Shaven and shorn,
And all forlorn"

beardless ones.

Though this communication is, I fear, too long, yet, for the sake of others, let me observe, that I have this year crossed the bearded with the beardless Polands, cock with hen, and hen with cock, and the result is, in by far the greatest majority of cases, that I have spoiled all; most of them still have some beard, but ruined in all other points; as in their small topknots, thin necks, &c.; but, in a *very* few cases, there is the smooth face, with a tolerably large topknot and the full neck.—F. R. Horner, M.D., *Hull.*

THE DOMESTIC PIGEON.

ON LAYING AND INCUBATION.

(*Continued from page* 202.)

It is sometimes necessary to make a substitution of eggs; for example, suppose a pair of valuable pigeons perish after laying, or escape permanently from the dovecote; instead of losing their eggs, we may place them under common pigeons, but this substitution requires some precaution. 1st, the time of their being laid must be exactly the same, whether the eggs have been set upon or not; if there is more than twenty-four hours difference, we run the risk of losing all. 2nd, we must change both the eggs, for if we only change one these animals have sagacity enough to discover it, and will throw it out of the nest. 3rd, never give them three, because they seldom cover more than two, and in this case they would separate one; but, as they are in the habit of moving them occasionally, in all probability they would not always separate the same one, and the result of this would be that they would all perish. However, they will sometimes adopt all three. Besides these cases that we have just mentioned, the substitution may be advantageously made in other circumstances. Suppose that one has a pair of rare pigeons, and desire their rapid increase; we might take every third brood from them, and have it hatched and brought up by other birds; we should by this means gain two or three pairs of young ones during the year; but we must not abuse this expedient by making use of it too long, as it would, after some time, greatly weaken the father, and still more the mother. When we would make this kind of substitution, we should use some means before hand to insure success. In a dovecote inhabited by a great number of pairs, it is indispensably necessary to write in chalk the date of the laying over each nest, so as to make the time exactly agree, as we have said above. We must also, as nearly as possible, give the eggs to be hatched to those birds that have produced clear eggs, so as not to lose a brood unnecessarily. Again, we should choose, as foster-parents, old pigeons, but still having energy, and above all, the habit of always rearing their broods well.

It would be very interesting to know how long eggs may be kept fit for brooding, in consequence of the facility we should have in procuring pigeons in this manner from some distance, the carriage of which is always very dear; but, unfortunately, observations on this subject have never been made sufficiently exact for us to be able to give any useful

information. Our knowledge on this matter is confined to some remarks made by chance, the result of which is, that some eggs put aside without any precaution, and taken again some time after as clear, to amuse some pigeons whose laying we would wish to retard, have, nevertheless, sometimes produced young ones healthy and strong. However, we know a means of preserving eggs fruitful during fifteen days, which is to put them in a box, on a thick bed of ashes sifted very fine, to cover them with another thick layer, and to shut the box close.

As soon as a female has laid her last egg, she begins to sit. Every day, about eleven o'clock in the morning, she leaves her eggs to go and feed at the trough; but, before doing so, she calls her mate by a particular little cooing. He immediately hastens to relieve her, and sits in his turn, until four o'clock in summer, and about three in winter. At this time the female returns to her nest, and does not leave it at night. If it happens that, led away by pleasure, she forgets herself longer than usual, the male rises, seeks her with uneasiness, and brings her back by administering matrimonial correction.

Buffon, and those authors who have copied him, pretend, that from the date of the laying of the second egg to the hatching of the young ones, it requires seventeen or eighteen days in summer, and nineteen or twenty in winter. M. Corbié observed the duration of incubation with a precision that no one had hitherto taken the trouble to do. It always had the same result, within a few hours. For 45 years, his pigeons, in winter as well as summer, have invariably sat from 420 to 424 hours, which corresponds to 17 days and 16 hours, when there has been any lack of heat, occasioned by the negligence or confusion of the pigeons; and 17 days and 12 hours when the pair sat close and warm equally. It is true, that the young ones never both hatch at the same time, and the second may not do so till 24 hours after the first; but the fault cannot proceed from that cause. We know that the young ones are about to hatch when the eggs are what we call chipped—that is to say, a little broken near the large end. It is a very common error to think that the shell is broken by the parents to help the young ones out; we may easily convince ourselves that such is not the case by the slightest examination, when we shall perceive that it is broken by the young pigeon alone; we have only to observe, that the crack of a chipped egg is always made from within, since the small fragments of the shell constantly rise up, or rather are pushed out, above the level of the surface of the egg. We may easily suppose that the operation of disentangling itself from its calcareous covering, to come to light, is extremely laborious for the little one. With some it quite surpasses their strength; and they perish, if I may thus speak, before they are born. In this case it is necessary to assist nature. We take a blunted pointed instrument, and open the egg with the greatest precaution, so as not to hurt the bird it encloses; for if the smallest particle of blood appears the bird infallibly dies. Never attempt this operation, except as a last remedy, and when nature has evidently exhausted all its resources, for if by this means we save one out of ten, we may think ourselves very fortunate. Besides, it is always dangerous to hasten it, since we have sometimes seen chipped eggs not hatch for 48 hours, without the young ones appearing to have suffered much.

(*To be continued.*)

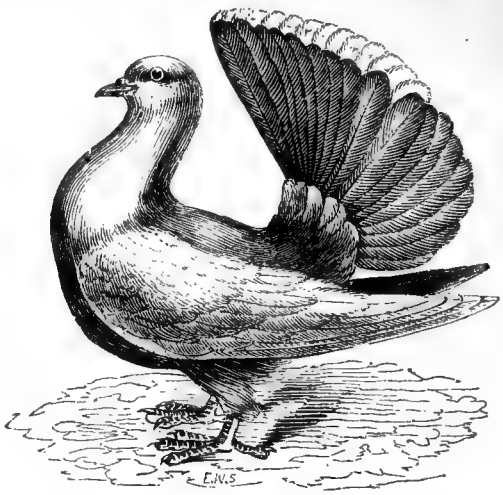
DOMESTIC PIGEONS.

(*Continued from page* 202.)

TWENTY-THIRD RACE.

Shaker Pigeon (*Columba tremula*).—These birds are very small; their beak is thin; their eyes have a yellow iris, and no filament; their wings are drooping below their tail, which is more or less elevated, and their feet are never ornamented with feathers. These singular animals are almost always agitated with a convulsive trembling, particularly when courting. They cannot be crossed with any other species without losing these characteristics. The Shaker pigeons do not thrive well in a dovecote; they fly badly, and are apt to be carried by the wind, in consequence of the size of their tail; but as they very soon become familiarized, they are frequently reared in a cage as objects of curiosity.

Broad-tailed Shaker Pigeon (*Columba tremula laticauda*).



—It has a very large tail, composed of from twenty-eight to forty-two feathers, having the faculty of raising and displaying it like the peacock. In doing this, it brings it forward, and then throws its head back so as to touch its tail. The animal trembles more or less in this attitude, and this trembling very much resembles that of a peacock or turkey-cock when spreading its tail. It is all white, or white with the head and tail black. There are even some to be met with whose cloak and tail partake of all the ordinary colours of pigeons. The female raises and displays her tail like the male, and has as fine a one. This bird is not very productive, and is but little sought after, except for its originality. It appears that this race has been brought to much greater perfection during some few years, for Buffon pretends that the handsomest have thirty-two feathers in the tail, and they are frequently to be met with at the present time with as many as forty-two (we know that all other pigeons have but twelve). Fresch remarks, that at the same time when the Peacock-pigeon displays its tail, which always happens when it is amorous, and frequently in other instances, it haughtily and constantly agitates its head and neck, very much like the bird called the woodpecker. Gmelli Careri, quoted by Buffon, says that pigeons are found in the Phillipine Islands which raise and display their tail like the peacock; are these individuals that have been carried there, or do ours come from that country? Another and more interesting question would be, to know if this Phillipian pigeon is found wild there, which would prove it to be not only a variety, but a true species. If that was the case, the great difficulty of knowing whether our varieties of the dovecote pigeon descend from the stockdove alone, or from the stockdove and other species crossed with it, would cease to be a difficulty.

Narrow-tailed Shaker, or Quaker Pigeon (*Columba tremula angusticauda*).—It only differs from the preceding by its almost continual shaking, and from not having the faculty of raising its tail, which is also much smaller.

Silky Shaker Pigeon (*Columba laticauda setacea*).—It resembles on the whole the peacock; but the beards of its feathers are soft, separated, and falling like a fringe of silk or cotton, which deprives it of the faculty of flying. It is, also, not very fruitful. Like the preceding, it is very familiar, and some amateurs bring them up in their apartments. Its flesh has a gamey flavour, resembling that of river birds.

The Guiana Shaker Pigeon (*Columba tremula Guianæ*). This superb variety, with a wide tail, and displayed like that of the peacock, has been brought from Guiana. The end of its plumage is of a dull white; the wings are blue, shaded with some kind of paler-coloured eyes, and striped with black bars. All the smaller races of pigeons, crossed with the Silky Shaker, produce Silky pigeons in all their forms and colours; but, above all, if we couple this one with a pigeon whose wings are barred with black, they will produce individuals whose fringed bars of varied colours will resemble unwoven fringe, and produce a very agreeable effect.

(*To be continued.*)

BRITISH FUNGI.

(*Continued from page* 137.)

In the higher, or most perfect groups, Fungi are undoubtedly equally worthy of our notice, and form a delightful recreation to those who seek them amongst the dead and dying bodies of both animals and vegetables. They are seldom, in the higher groups, found growing as parasites on the living bodies of other plants. Sometimes, however, our noble forest-trees, either where they have been injured, or where, from disease, they have in certain parts decayed, are attacked by fungi of the higher groups; for as soon as ever decomposition takes place, then do fungi take possession and flourish, thereby proving themselves, as before-named, the scavengers of nature.

They are fungi which, in autumn, spring up and flourish upon the perishing remains of our gaudy summer flowers, thus converting the robes of one generation into manure to supply nourishment for a succeeding one of equal grandeur. Truly may we say "all the world's a stage;" one generation, having performed its part, passes off but to make room for a succeeding one, which, in its turn, performs its allotted office, and then makes room for some other successor.

The variety of forms, colours, and odours, are more numerous in this class of plants than any we are acquainted with—one genus alone producing species corresponding to every hue, which adds considerably to the extreme beauty of this extensive order of plants; and even the painter has but little fear of committing excess in profuse tints, which, with flowering plants, sometimes offends the eye as it swerves from truth; and those who minutely examine them will find their veiled beauties rival, in symmetry and splendour, the tulip and lily, those gaudy favourites of the world in common.

Again, there is something truly delightful in that varied fragrance which leads us to their hidden retreat. Linnæus states, that the *Polyporus suaveolens* produces a delightful odour which is much admired, and that the young men of Lapland carry it with them to render themselves more agreeable. The phosphorescent light which mitigates the gloominess of those regions in which fungi almost alone delight to dwell, are not wholly confined to the lower groups, for many recorded by travellers are equal and similar in their light to the moon's pale beams; others are equal to large fire-flies, as *Agaricus olearius*, *Agaricus Gardneri*, and several *Agarics* at the Swan River.

Polyporus lucidus is a most elegant species, found in all parts of the world, like that of which Mr. Curtis describes a magnificent specimen found growing at Peckham. He scarcely knew, at first, whether he had found a natural or artificial production.

Perhaps nothing concerning the growth of fungi has created so much interest as the formation of fairy-rings, caused, generally, by *Agaricus oreades*, *coccineus*, or *personatus*. In the first place, I must state, that the circular appearance in pastures where the grass is generally found darker, more luxuriant, and of a coarser nature, is not, as is generally supposed, the result of the fungi growing beneath it, but, rather that the decaying fungi of the preceding year manures the soil suitable to the grass, but in their growth rob it of that nutriment which is beneficial to themselves; therefore, it is well to remark, that the same circular appearance might be artificially produced by distributing manure in a circular direction; but, that in a majority of instances, the circular appearance observed in downs and pastures is caused by fungi, in my opinion, there is no doubt. It next remains to enquire why fungi should so generally produce this circular growth.

First.—Fungi (unlike flowering plants) commence their growth by throwing out filamentous threads in a radiating direction, which finally cross each other, and terminate by collecting and joining together at certain points, from which the portion bearing the fructification springs. And these filamentous threads (which are generally formed in the dark, and are concealed under ground, passing unnoticed) are termed the Mycelium (spawn), and form the most important part of the plant (and in parasitic fungi the only injurious part). What is generally known as the mushroom, and is seen above ground, is not, as is generally supposed, the whole plant, but, rather, the inflorescence (only), or portion bearing the fructification which spring from the growing points of the Mycelium above-named; so that it is probable the whole circle which forms a fairy-ring is numerous flower-stalks from the Mycelium or spawn of one plant concealed beneath the grass, and not a circular collection of many plants.

Secondly.—Fungi never grow two successive years on the same ground; for the spores, falling on the interior of the circle, perish, owing to the ground being previously deprived of the nourishment suitable to them; but those falling on the exterior of the circle, spring up and form the succeeding crop. On the other hand, the fungi, during their growth, derive nourishment from the decaying portions of other vegetables (or animals), but, in their decaying, supply nourishment for the grass the following year.

Fungi are remarkable for the rapidity with which they grow; some attain perfection, and dissolve away in a few hours, and *Phallus impudicus* has been known to shoot up three inches in twenty-five minutes, and to attain its full elevation of six inches in an hour-and-half; and *Bovista gigantea*, in a single night, has increased from the size of a pea to that of a melon. I deem it unnecessary to dwell on the expansive power in the growth of fungi, as I consider this property of the vegetable kingdom generally, which hurls to the ground our noble works of art, is too well known to be for a moment doubted.

Some fungi have the power to repair injuries they have received, and even to replace portions of their bodies that have been accidentally removed, as *Boletus*, *Polyporus*, and *Lycoperdons*.

Tan, although it kills some plants, has a quite opposite effect on fungi; in fact, one fungus originates in saw-pits. They are nearly the only plants that have not been found in a fossil state, which may be accounted for by their being amongst the simplest in structure of any existing plants, and, therefore, few would retain their forms long enough to be sealed up by successive deposits in the heart of nascent stone. Fungi secrete albumen, sugar, a fatty matter, and several acids, and by putrefaction of the fleshy substance is obtained fungin, which is very analogous to animal substances, abounds in nitrogen, and forms the greater portion of all fungi (whether poisonous or otherwise); and, therefore, by removing the poisonous secretions, all fungi may be considered as the most nutritious and important, as an article of food, of all vegetables; and to the eatable ones especially my next paper will be devoted.

F. Y. Brocas.

(*To be continued.*)

SHORT NOTES.

Mistletoe.—As much interest seems to be felt by many of your correspondents about this interesting plant, it may save disappointment if I mention my experience. The plant requires a moist atmosphere; hence it is that it flourishes so well in the western counties. If the climate is not naturally moist, it must be planted on trees in a damp, shady situation, near water, &c. It will only germinate, and often not even so much as that in a sunny, airy garden.

Rooks.—I believe these birds are actuated by an instinctive political economy. It is, I think, an established fact, that many rookeries have been deserted owing to the gun not being freely used; in other words, the communities become so large that the feeding ground would not support them. They have, in such case, no alternative but emigration, or rather dispersion. I think it will be found that they require abundance of food in the breeding time pretty close at hand; at least, I have observed, this year, that the rooks of a rookery, about a mile-and-half from my house, never foraged for their young much more than a quarter of a mile from their nest trees, whilst, at other times of the year, I have them regularly enough in my meadow, and this is the nearest rookery to me.—Sigma.

Substitute for Malted Barley.—Robert Baker, of Writtle, Essex, a respectable agriculturist and land-valuer, has published a letter, in which he says:—"I have at the present moment thirty hogsheads of beer brewed from beet, at a cost of 2½d. per gallon, quite equal in quality to that brewed from malt. It may be tasted upon the premises by any person desirous of availing himself of the opportunity.

As I intend to publish a statement of the entire process, I shall not enter at present into further detail, but advise every farmer of 200 or 300 acres of land to plant one-quarter-of-an-acre with the *White Silesian Sugar Beet*, and I will undertake to teach him afterwards how to convert it, at an additional cost of 50s., into a substance equal to from eight to ten quarters of barley malt, for brewing, and which will not cost altogether more than 20s. per quarter. This is no visionary project, of which any one may satisfy himself, if he will pay a visit to my farm at Writtle. The Yellow Globe Mangold-wurtzel will answer, but the flavour of the beer is not so pleasant as that derived from the Silesian; but it is, however, more productive, and more easily obtained, and an excellent beer may be brewed from it at 10s. per hogshead."

CINDER SIFTER.—I saw the other day, at the house of a friend, what appeared to me a very simple and cleanly contrivance for sifting cinders. It stood in his back kitchen, and was a box, say two feet wide, two feet deep, and eighteen inches from back to front, with a close-fitting lid, a couple of wood handles, and two convex pieces of wood nailed on the bottom to serve as rockers. Within, was the sieve four inches deep, its sides of wood, with a wire bottom, resting on two ledges, upon which it slid freely from side to side, being made four inches shorter than the width of the box. The cinders being placed in the sieve, and the lid put on, it was only necessary to rock it two or three times by pressing with the thumb and finger at one end of the box, and the ash was discharged to the bottom. The operation might take a minute, and was performed with the greatest cleanliness. Its other advantages were, that the servant, instead of being obliged to go out daily in all weathers, could sift her cinders indoors as often as they accumulated, and the box required to be emptied but once a week. The one I saw was painted, but it might be made roughly and of any dimensions, and serve to sift mould or other materials for potting plants in a shed or greenhouse.—S. P., *Rushmere*.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

HONEY DEW.—*H. W. N.* writes to us as follows:—"Your correspondent, 'J. B. P.,' has made some observations on this subject. In reply to part of them—laurels have an exudation during four months in the year which the hive bee delights in: some trees yield a honey dew to only one or two species of the wild bee—the beech is one of these. The *Apis terrestris*, and one other species, may be seen at this time in great numbers on the beech leaves, but none of the hive bees. Wasps are in the greatest numbers at present on the larch, of the resinous juice of which they seem exceedingly fond. In very hot summers the extraordinary exudation of honey dew supplies the place of flowers; indeed, a week of this dew is more productive of honey than a month of the finest bee-flowers. A high temperature is required to produce honey dew in full force. I have long observed that in cold, wet summers very little honey dew appears. That mentioned by your Dublin correspondent, on the laurels, is not the same sort which appears on the sycamore, lime, oak, and fruit trees. The laurels in all seasons afford some honey to the hive bees. The great honey dew which takes place in hot summers is quite independent of this, and during the late thunder storms seems to have been very general."

DESTROYING THISTLES.—*Pratensis* asks, "What truth is there in the proverb?

'Cut a thistle in June,
And you cut him too soon;
Cut a thistle in July,
And then he's sure to die.'

If true, what are the reasons?" The proverb is correct, and easily explicable. If you cut down a thistle whilst vigorous in June, it has power to shoot again, and to elaborate sap for fresh growth next year; but if you cut it in July, after its strength is exhausted in producing its flowers, it has neither strength nor time to effect that elaboration of sap before the winter sets in, and it either dies, or is killed by an early cutting down, the year following.

SWARM IN STOCK'S PLACE.—*B. B.* asks—"When a stock swarms, I have, in four instances, placed the swarm in the place occupied by the stock, and stopped up the stock. This plan has answered, so far as to prevent casting (which I now consider will not take place, this being the fifteenth day since two swarms came off). Now, in all the cases the bees have immediately set upon the drones, hundreds of which were found dead on the hives being unstopped. Will not this be prejudicial to the hive being furnished only with a virgin queen? You will see I am not of Huish's opinion, that the queen is a virgin and mother." To this "A Country Curate" replies—"I do not think your correspondent, 'B. B.,' need feel any anxiety about the success of his stock, which, when shut up, killed their drones. That they should wish to get rid of them, under the trying circumstances of last month, when starvation stared even the strongest hives in the face, is not to be wondered at. It speaks well for the sagacity of the bees. The fact, however, is to me interesting, as being singular. I never have shut up my bees as yet, but have let as many join the swarm as choose, (I mean where the swarm has been located on the old stand in the place of the parent stock), therefore it is, perhaps, that I have never witnessed this circumstance. Have any other of your apiarian readers, who may have given my new system a trial, experienced anything of the kind? I remember well, last summer, that after the issue of a monster prime swarm on the first of June, from a monster hive (itself an artificial swarm of 1851; queen then at least two years old), holding at least *ten gallons, i. e.*, 1¼ bushel, the bees which remained at once set about killing the drones, of whom many hundreds were destroyed, chiefly young, though full fledged ones, while quite enough were left—in fact as many hundreds—for all the needs of the hive. And I dare say "B. B." will have seen a great many drones by this time issue from each of these hives on fine days. At all events, the bees, depend upon it, knew what they were about. Even had *all* the drones been destroyed in those identical hives, it would have mattered little, provided there were common bees enough to keep up the necessary temperature, of which there can be no doubt. Huber proved, years ago, and I have abundantly proved this year, that drones are not requisite *in* a hive which has a virgin queen, provided there are drones in the apiary close at hand. I had a virgin artificial queen (reared after the process suggested at pages 119 and 120, vol. vii., COTTAGE GARDENER, *i. e.*, in a glass over a hive containing some empty comb with a little honey) hatched on the 9th of May last, the swarm having been made on the 27th of April out of a nine-gallon hive, in which I had as yet seen no drones, although there were a good many in two hives in the kitchen-garden twenty yards off. On the 13th, I caught sight of a drone entering the hive, I believe one that had scented his way in from one of the other hives. On the 14th, I took away the glass in which the young queen had been reared before my eyes, caught her (she was a fine queen), and examined the comb, but found not a single egg. The queen, who I do not think had yet left the hive, was then put back into the hive, but did not, I think, begin to lay till about the 23rd. Besides this drone, I am not aware of any having been seen in or about this artificial swarm, yet its queen has turned out very prolific, the hive being at this moment (July 12th) full of brood, and the bees hanging out at the entrance. The queen of another stock, out of which another artificial swarm was forced, *a la Scudamore*, on the 15th of May, also became a prolific mother (she also having been reared artificially), although there were scarcely any drones in the hive. I saw her myself returning home from an excursion abroad three several times; this was some days after her birth. I take this opportunity of requesting those of your apiarian readers who have tried the plan of substituting swarms for old stocks to inform us of their success—or failure, should they have had the ill-luck to fail. The season, however (though much improved of late), has been very unfavourable for all late May or June swarms (whatever be the system of management, new or old), many of which have perished from sheer starvation in many parts of the country."

ROSE-BUDS DYING (*B. B.*).—Some check at the roots, we think, was the probable cause of your rose-buds dying off suddenly; but, were we on the spot, we might have been as much puzzled as yourself.

HEAT FOR PINE-APPLES (*An Amateur*).—"Having commenced pine-apple growing as an amateur, and wishing to obtain all the information I could on the subject, I was told that if went to F. Middleton's, Esq., Park Hill, near Eckington, I should see some pines growing in great perfection on a new plan. Accordingly I went over, and Mr. Barnes, the gardener, very politely showed me the pines, and explained his method of growing them. The plants are plunged in the open mould, in a bed heated by a tank of hot water underneath, and the top-heat is obtained by a flow and return pipe along the front, and the end of the house is heated by the same pipe flowing into a cistern in the house, and which also supplies him with warm water for his use. I asked him the temperature he kept his bottom-heat at; he said from 90° to 95°, and sometimes over that; the water in the tanks to obtain the bottom-heat was then 130°. He told me that it was a new mode of heating, and that it had been in operation about eleven months, and nothing could do better; his pines did look remarkably well. He said he had cut nine fruit, and he had now twelve more in fruit, out of thirty, which he first planted in September last; and he has some capital successions coming on, which he told me were only suckers in March last; these he is growing in the front bed in his house. I must tell you, by the way, there is a path through the middle of the house, dividing it in two beds, and all last winter he grew cucumbers in the front bed; but finding the plan answer so well for pines, he has now devoted the whole house to it, and has put up a pit at the end of the house, twenty feet long, heated the same, and from the same apparatus, to grow his early cucumbers in; he has tried it with melons this season, and has grown them in it to great perfection. He told me he had cut thirty fruit from four plants, and is now growing another crop from the same plants. I must say his pines are looking first-rate, and his succession plants are growing like barley, and it appears to me that the plan he has adopted is a good one; he told me that his master saw it last year exhibited in the Crystal Palace. What led me to make these observations was, I was reading Mr. Errington's article in THE COTTAGE GARDENER to-day, on Pine-apple Culture, wherein he says 90° may be harmless, or, in some cases, beneficial, yet 85° is a more safe proceeding; here, it appears, the plants have been constantly kept in a temperature of 90° or 95°, and are doing WELL." In reply to your first—"Which is the best mode of heating a bed for pines?" we answer—Tanks, or piping; being by far more certain than fermenting materials. 2nd. "Are they best grown in pots, or in the open mould?" This depends on the kind, and the objects of the cultivator; this question may not be answered in the abstract. If the only problem was, how to grow the largest pine, we should say, plant out in accordance with nature, all other accessories to perfection being present. But this answer is far from settling the whole question; kinds and conditions urge other considerations. 3rd. "If successions have been grown in a temperature of 90° or 95° bottom-heat, may they be allowed that temperature until they fruit?" The idea of setting up *one* standard of bottom-heat, irrespective of the seasons and the atmospheric conditions,

is most preposterous. Science will not own such practices; nature abhors them; and yet we meet with glaring successes occasionally—*apparently* the result of these bad practices. We are aware that the pine will endure,—it may enjoy,—95° under certain circumstances; but dare any man persist in recommending such a thing for a pine-pit at Christmas? We think not. More of this by-and-by; we thank you for the clue afforded.

MILDEWED PEACH TREES (*E. D.*).—Give your peach trees a thorough soaking of liquid manure (presuming your case mildew), unless you are assured the soil is already wet and stagnant; and dust flowers of sulphur liberally over all affected parts, repeating the dose if washed off.

PEACH-FORCING (*Habrothamnus*).—Peaches commenced the first week in January should be ripe in the beginning of July. We should much fear that the syringing is concerned in producing the defect you allude to. Grapes it was sure to be prejudicial to.

PITS—MODES OF HEATING, &c. (*L. B. T.*).—You will find most of your enquiries answered in an essay by Mr. Errington. For your melons and strawberries, we should say hot water by all means; the form of roof is much a matter of choice. We should not fear to adopt a span, presenting east and west facings, with a walk up the centre. If you have a pit eighteen lights long, heated by hot water, why, surely, you can make potato pits out of it without moving a brick. We should prefer a span propagating pit, with north and south roofs; the north side giving a five-feet bench, and the south a three-feet one. The back bench for cuttings, and the front for potted-off stock. This should have a canvass shade on rollers. A walk, of course, up the centre, and the roof kept low and flat in pitch. You might go down three or four steps into it. The rest of your plans are not well enough defined to enable us to give advice.

PHEASANTS' EGGS.—*Upwards and Onwards* says:—"I would advise 'A Correspondent and Old Subscriber,' to defer procuring these at all so late in the season, if he intends them for breeding purposes. Pheasants begin to lay in April, therefore fresh eggs are very unlikely to be obtained now; besides, there is a great deal of truth in the old distich, which says—

'Between the sickle and the scythe,
What you rear will seldom thrive.'"

GAPES IN POULTRY (*M. R.*).—We are making some enquiries which shall be published.

WHITE POPPY (*Cadjoon*).—This (*Papaver somniferum*) can be, and is cultivated largely in England, for the sake of its heads or seed-capsules. You may obtain seeds out of those heads at almost any druggist's. There is a very full report of experiments conducted with the intention of obtaining Opium from them, in one of the volumes of the *Quarterly Journal of Science*, formerly edited by Professor Brande. The Castor Oil Plant (*Ricinus communis*) is a half-hardy annual, but it grows but indifferently, even in summer, without the shelter of a greenhouse. What Indian plants do you require.

STAKES FOR DAHLIAS AND HOLLYHOCKS (*Q.*).—We find those made of red pine, painted brown, and carefully kept dry when not in use, last for many years. We say painted *brown*, because that colour harmonises best with the foliage. The following note will be a good answer to your query, "Which wood will make the most enduring stakes?" "It is now about ten years ago, that I got a number of dahlia and other flower supports made from East Indian teak wood, and at the present time they are nearly as fresh as when made. This is to be accounted for by the oily nature of that wood, which prevents decay, although allowed to remain in the ground for many years. It is more expensive than pine, but it lasts so much longer, that it is much cheaper in the end. If you consider this notice worthy of a place in your valuable work, some of your readers may give a trial to the teak wood stake."—JOHN M'MURTRIE, *Port Glasgow*.

POTATOES (*H.*).—The very earliest variety is the genuine *Walnut-leaved Kidney*; a very late variety is the *Late Jersey*. We cannot tell you where you can get grafts of orange-trees.

WHITE COCHIN-CHINA FOWLS.—*A New Subscriber* wishes for a pair of pure bred. If we required any, we should venture to write to Mrs. Herbert, of Powick, in Worcestershire, who has a beautiful breed of them.

VINEGAR PLANT (*J. Holland*).—Nearly all that is known of this fungus will be found in our second volume, especially in No. 35.

WHITE COMB IN POULTRY (*D. V. C.*).—For mode of applying it, see page 248. There needs no very definite receipt—cocoa-nut oil (which is nearly as solid as spermaceti) with a little turmeric to colour it a deep yellow, is all that is needed. Lose no time before you apply the ointment. It is a needless expense to give poultry brown sugar in their food. If you feed them either too plentifully or too nutritiously the hens will either get too fat or have inflammation of the ovarium. Either case will cause soft eggs or barrenness.

ROSE-LEAVES BLOTCHED (*Eugenia*).—Nothing will prevent this, nor is it desirable that it should be prevented. It is more symptomatic that the year's growth is completed than of anything else. Keep the roots covered with mulch during the spring and summer, and well supplied with water and liquid manure whilst they are growing.

SAVIN AND SAFFRON (*A Reader*).—They are totally different; the first is an evergreen shrub (*Juniperus sabina*), and Saffron is the dried anthers of the common bulbous plant, *Crocus sativa*.

LEWES POULTRY SHOW (*A Subscriber, Croydon*)—No one can regret the mistake more than ourselves. We were right in stating that the meeting commenced on the 12th, which it did, with the trial of implements; but it was an omission not to have stated that the poultry show commenced on the 14th.

PEACOCKS CUT IN YEW.—*Queen Mab* wishes to purchase two good specimens of these, to be transplanted at the proper season. We never saw these deformities but once, and that was at Bedfont. As we read "Queen Mab's" description of them, as "topiary-work peacocks," imagination carried us back to the days of William of Orange, and all the distortions of Dutch gardening.

GREEN SCUM IN PONDS.—A correspondent (*J. S. Stoke*) says,—"In reply to a lady, I beg to state, our fresh water river snails are recommended for preventing green scum on fish-ponds."

IMPLEMENTS.—The Royal Agricultural Society have this year given Messrs. Mapplebeck and Lowe the prize for the best instruments for hand use in draining; and the Judges have also highly commended their American digging forks and farm tools, especially those for cottagers' and farm labourers' use.

RHUBARB PRESERVING (*Ibid*).—If the stalks are gathered in dry weather, cut into slices as for a tart, and are then treated like bottled gooseberries, the slices will keep good until January. This we are told, but have not tried.

NAMES OF PLANTS (*T. M. W.*).—Your *pea* is known as the White Crown, American Crown, and Rose Pea. It is the *Pois-a-bouquet* of the French. In botanical language, it is *Pisum sativum umbellatum*, and some have considered it as a distinct species. We cannot make out your bulb even from your very full description. We incline to think it *Ornithogalum caudatum*, but one botanical friend thinks it may be *Arthropodium paniculatum*. (*M. S.*).—Your *strawberry* is apparently Vilmorin's *Compte de Paris*, but it was too much bruised for us to be certain. (*Rev. H. H.*).—*Melilotus officinalis*, formerly called *Trifolium officinalis*, Melilot Trefoil, King's Clover, &c. (*F. G.*).—We cannot recognise yours from a single leaf and corolla. (*A Constant Subscriber*).—The fungus is *Phallus impudicus*, or Stinking Morel. Destroy it in its young state by the hoe, and it will be soon got rid of. (*Ignoramus*).—We think the piece of a shrub is *Centaurea alata*. The others are *Veronica foliosa*; *V. maritima variegata*; *Lythrum alatum*; *Pentstemon gentianoides* var. *coccinea*. What you call a Lychnis is *Agrostemma coronaria*; the double white flower *Pyrethrum parthenium* var. *plenum*; the pale *Phlox delicata*; the dark *Phlox acutifolia* (?)

CALENDAR FOR AUGUST.

ORCHID HOUSE.

AIR, give plentifully on all fine days, to consolidate the now fast-forming new pseudo-bulbs. BASKETS, dip every week in tepid water. BLOCKS, syringe twice a day. BARKERIAS now growing, keep very moist till the annual growth is made; allow the air to play freely upon them, this will strengthen the plants much. DENDROBIUMS; many will have made their new pseudo-bulbs, cease giving much water to these, and remove them into a cooler house. EPIDENDRUMS in the same condition, give a similar treatment to. GRAMMATOPHYLLUM, a noble orchid, continue growing on yet. HUNTLEYAS, having no pseudo-bulbs, continue to keep moderately moist and cool. INSECTS, diligently keep under, or they will be a pest all the year, and be difficult to eradicate in winter. LŒLIAS will now be growing freely, be liberal, and use the syringe frequently; if on blocks, add a thin layer of moss to give and retain moisture about the roots. MOISTURE TO THE INTERNAL AIR, continue to supply daily, especially in the growing department. PERISTERIA ELATA, and all similar terrestrial species, keep moist as long as the bulbs continue to swell, but not a moment longer. PLANTS IN BASKETS, remove into a cooler house when in bloom, or as soon as the new growth is perfected. All plants that have made their pseudo-bulbs quite up should have the benefit of a lower and drier atmosphere. This point must be strictly attended to, because if they are kept moist they will start to growth the second time, which will weaken stronger growth and materially injure the blooms. The success of next year's bloom depends much upon the strength of the preceding year's growth, together with a judicious period of rest, induced by a cool and dry treatment.

T. APPLEBY.

PLANT STOVE.

ACHIMENES done flowering, set out-of-doors, laying the pots on one side, to keep the bulbs at rest, and free from wet. AIR, give liberally through the whole month, unless cold wet days intervene toward the end. CUTTINGS, pot off as soon as struck, because the time is short for them to acquire strength to carry them through the winter. GLOXINIAS and GESNERAS, as they cease blooming, treat the same as Achimenes. HEAT, keep under as much as possible, but have the flues and pipes in good order for working, as cold nights might come towards the latter end. INSECTS, destroy as much as possible, or they will rapidly increase. IXORAS, specimens of, top-dress and tie out, so as to form handsome bushes of a rather pyramidal form. Young plants give a shift to, b.; stop and tie out; moisture, supply plentifully both to the roots of the plants, and to the internal air. PASSION-FLOWERS, and other climbers, trim in freely, and tie them so as to allow plenty of light to descend amongst the plants. PLANTS IN FRAMES, top dress, and repot if needful; give plenty of air to, and water only in the mornings. SPONGE, use freely to clear the leaves from dust and insects; this is preferable to so much syringing. WATER more moderately as the days shorten. WEEDS and decaying leaves remove daily.

T. APPLEBY.

FLORISTS' FLOWERS.

AURICULAS and POLYANTHUSES, finish potting, b. CINERARIAS, take off slips, transplant seedlings, sow, b., for the last time this year. CARNATIONS and PICOTEES, finish layering, m.; seedlings transplant. CHRYSANTHEMUMS, layer those planted out for that purpose; pot off cuttings; give the last potting to all intended for blooming; water most abundantly, and syringe daily. DAHLIAS, stake, tie, mulch and water in dry weather; cuttings of new ones may yet be struck. FUCHSIAS done blooming, place out-of-doors; save seed. HOLLYHOCKS, keep well tied to the stakes; cuttings of, put in heat under a frame, shade from

sun till rooted. Pansies, save seed of, put in cuttings, b., for the last time this year; transplant seedlings. Pinks, cut down old flower-stems; save seed of; transplant pipings already rooted, and also seedlings. Pelargoniums, cut down; give no water till they break again; put in cuttings; transplant seedlings; pot off cuttings already rooted. Petunias, save seed from; transplant seedlings of; put in cuttings. Ranunculuses, take up and store without fail, b., or they will begin to grow again. Roses, bud b.; put in cuttings of; save seed. Tulips, if not all taken up, should be at once. Verbenas, peg down; water freely in dry weather; put in cuttings of good kinds only; save seed. See that all *plants in pots* are duly supplied with water, and keep a constant look out for all kinds of vermin. T. Appleby.

FLOWER GARDEN,

Anemones (common) sow. Annuals, stick; water; clear from decayed leaves, &c. Auriculas, shift into fresh earth; water; seedlings prick out; sow. Beds, in which bulbous flowers have grown, fill with annuals from pots, to flower through autumn. Biennial seedlings, transplant. Bulbous-rooted flower-seeds, as *bulbous Iris*, &c., to obtain varieties, sow. Bulbous roots remove or transplant; remove and plant offsets; plant. Carnation layers cut from old root and plant; water frequently; layering may still be done, b.; card the flowers, and shade from sun, e. Dahlias, stake; thin the flowers. Daisies propagate. Put in Cuttings of all flower-garden *Geraniums* early Double-blossomed perennials with fibrous roots, as fine double *Larkspurs*, &c., propagate by division, e. Dress borders as required. Edgings of box, &c., clip in wet weather. Evergreens may be moved, e., if wet weather; plant cuttings. Grass, mow and roll weekly. Grass Seeds may be sown, e. Gravel, weed and roll weekly. Hedges, clip in moist weather, except laurel and holly hedges. Heliotropes, put in cuttings under glass in a gentle heat, b. Mignonette sow in frame, b. Pelargoniums propagate by cuttings, b. Perennials, in pots and elsewhere, will require water almost daily; cut down flower-stalks as they finish blooming; seedlings transplant. Pipings of Pinks may be planted out. Polyanthuses, sow. Ponds keep clear of green scum. Potted Annuals will require water daily in dry weather. Ranunculuses, sow; plant in pots to bloom in November. Roses, bud; prune in strong straggling shoots; cuttings of China and Tea-scented varieties plant under hand-glasses. Roses may be budded to the end of September on the Manetti and some Bourbon stocks. September is the best time to bud, unless done at the end of May. Seeds, gather as they ripen. Even those of Heliotropes and Verbenas will frequently be found to be fertile. Shrubbery, cut off the bunches of seeds of Laburnums and Lilacs, &c., to strengthen in the bloom next year; also cut off the seeds of Rhododendrons. Sowings, to obtain varieties, had better be done in boxes. Ten-week stock, sow, b. Tulips, and other bulbous-rooted flower-seeds, sow. Turf may be laid, e. Verbenas, put in cuttings of new kinds, e. Watering will be required generally in dry weather. Weeding, generally attend to. *Cuttings* of Penstemons, Snapdragons, double Lychnis, and other herbaceous plants, will yet succeed, if planted and shaded under hand-glasses. Of the *China Asters*, mark the finest, and save for seed. D. Beaton.

GREENHOUSE.

Air, give plenty night and day, especially during the former. In very hot weather, it is often advisable to keep rather close with a moist atmosphere during the day, even though the sashes should be entirely removed in the evening, to be replaced in the morning. This treatment will apply to *Heaths, Azaleas, Camellias*, &c., that are now making their growth. Those which have set their buds may be removed to a sheltered place, and have no glass protection for a time. Budding, of all things, finish before the wood gets hard. It may yet be done with *Oranges, Camellias*, &c. Cinerarias, propagate by rooted slips, and transfer the earliest to blooming pots. Pelargoniums: those done flowering cut down, and now pushing again may have the soil shaken from them, be placed in light soil, and in a close moist pit, to encourage free growth. Until that growth has taken place, however, give little water at the roots. In growing from cuttings, success will greatly depend in never allowing them to stand still, but keeping them constantly, but slowly, growing. Cut down successional plants as they get out of bloom. The fancy kinds, if the points and old flowers are merely removed, will flower again before winter. Greenhouse Plants in General, if healthy, and their wood made, will be better out-of-doors in a sheltered place than within; defending the pots from being too much heated in sunshine is even of more importance than shading the tops. All Young Stock growing freely begin to harden by exposure by the end of the month. Potting: finish shifting as soon as possible, that the plants may be feeling the outside of the pots before winter. Chrysanthemums, Salvias, &c., for winter blooming, set in an open place fully exposed to sun and air. The former must not be stopped any more. The latter should alone receive final stopping and shifting. Propagation: almost everything may now be successfully propagated. The whole of the Succulent Geranium Family will do best on a south border. Climbers, on the rafters, train when over rampant, but the more natural looking the better. By and by they must be cut in to allow more light to the plants. Gather Seeds of all desirable things as they ripen. The propagating of half-hardy things, such as Calceolarias, may commence about the end of the month. About the middle of the month, sow seed of herbaceous kinds in a cool pit. Watering will not be wanted quite so much, unless the days are very bright. In such days use the syringe among growing plants freely in the afternoon. Dress, tie, surface earth, and keep all neat and clean. R. Fish.

FRUIT-FORCING DEPARTMENT.

As long as the temperature will permit, admit Air day and night. Allow the Temperature to range, with sun-heat, from 65° to 85°, and during night from 55° to 65°. Figs, water liberally. Give the last shifting, early in the month, to those Pines intended for early fruiting next season; let others follow in succession; keep down superfluous suckers; use abundance of atmospheric moisture. Clear ripe Grapes from all diseased and mouldy berries; admit abundance of air. Keep down, or, rather, keep *away*, the Red Spider, by lighting a fire on dull days, and brushing the pipes or flues with a thin mixture of sulphur and water. Thin freely the late crops, and water the Vines in dry weather with liquid manure, also use mulchings. Give Peach-houses from which the fruit has been gathered copious syringings; and get the wood hardened and ripened before removing the sashes. Regulate and stop the shoots, and set the fruit on Melon plants; use manure-water liberally. Strike cuttings, or sow seeds, of Cucumbers intended for a late supply. Encourage the completion of growth of all Plants in Pots intended for forcing, and place those fully matured at the back of a north wall. Lay Strawberries in small pots, to be shifted into larger. Turn Bark Beds. Paint, wash. Clear out furnaces, empty and rinse out boilers, and have everything in readiness for a cold weather campaign. R. Errington.

ORCHARD.

Budding, finish, and remove bandages from that done three weeks since. Remove waste shoots from stocks, especially below the bud. Blight (American), apply the brush once more, using spirits of turpentine. Aphides, still try to extirpate them in peaches, plums, &c. Red Spider, if this appears, dust flowers of sulphur on the back of the leaves. Cherries, net carefully. Coccus, or scaly insect; if this appears use soap-suds. Figs, continue to disbud, and commence stopping rambling shoots. Vines, follow up stopping of laterals, and keep them thin; also thin the berries. Apricots, stop gross leaders, and keep down breast shoots by pinching. Peaches and Nectarines, stop all gross shoots, and keep under breast wood by the same process; where too thick, remove shoots altogether. Pears, remove foreright spray, thinning or stopping the wood freely, first selecting and tying down all short-jointed and brown-looking wood. Protect fruit with nets, &c. Wasps, destroy nests. Late Strawberries, water well. Alpines, reduce runners from, and place slates or tiles beneath. Strawberries, make plantations of early and strong runners. Raspberries (double-bearing), remove all barren shoots from, and carefully train those in blossom. Tomatoes, thin, stop, and train. Commence and complete, as soon as possible, all Nailing and Training, whether on walls, pales, or espalier trellises. Gooseberries, still continue the extirpation of caterpillars. Bush Fruit, retard by shading with mats. Grafts, remove stock shoots from, and protect from wind waving. R. Errington.

KITCHEN-GARDEN.

Particular attention should be paid to Sowing from the 1st up to the 12th of this month, as so many of our best vegetables and flowers are produced for the next season from the sowing made at the above-mentioned time; the *Cauliflower* only should be deferred until about the 21st of the month. Alexanders and Angelica, sow, and attend to earthing-up that in growth. Artichokes, cut away the heads of, whether required for use or not, for if allowed to run to flower they will very much exhaust the roots. Asparagus, attend to; keep clear from weeds; should any branches be falling about over pathways let them be tied up to sticks rather than cut away. Basil, attend to; cut and dry off steadily when in bloom. Borage, sow, and thin out growing crops, or earth-stir and look after seeds. Borecoles, Brocolis, and Brussels Sprouts, plant out as early as possible; do not spare manure among any of the cabbage tribe. Cabbages, sow of any favourite kinds; also a little *Red Dutch* for pickling; and prick out for planting out next month. Carrots (Early Horn), sow on dry warm borders for early spring use; keep the growing crops clear from weeds. Capsicums encourage the growth of by earth-stirring. Cauliflowers, sow out in open quarters, so as to have a stock of healthy sturdy plants, about the 21st to the 24th, to stand the winter; also plant, and water well. Celery, plant out in earnest, and attend to earthing-up advancing crops in dry weather. Cress (American), sow. Cucumbers, attend to thinning, topping, and clearing away all decayed leaves, either in pits, frames, or out-door crops; cuttings may be struck of any favourite kinds for autumn and winter growth. Endive, sow, plant, or prick in succession, and tie up, or cover up, full grown for blanching. Herbs of all kinds, cut and dry when in flower. Hoeing, attend to at all favourable opportunities. Leeks, plant out. Lettuces, sow Brown Cos and Hardy Hammersmith, the two best kinds for general culture. Melons, give plenty of air to; be sparing of the water among those ripening off their fruit; encourage the growth of the younger crops just swelling off their fruit with about three liberal waterings of liquid manure-water; let it be given steadily from the spout of the water-pot, and principally at the back part of the beds, and not over the crowns of the plants; and sprinkle almost daily in hot, dry weather, at shutting-up time. Onions, sow of the silver-skinned kind, being most hardy, to stand the winter; keep the advancing crops clear from weeds, and press down stiff-necked towards the end of the month, as cases may require. Parsley, cut down or transplant, or sow, and collect seed. Potatoes, if early and ripe, may be taken up and stored away in a cool situation, for present use, in particular where the ground is wanted for some other immediate crop. Radishes, sow, if required. Savoys, plant out as early as possible. Seeds of all kinds, collect as fast as they ripen, or the birds will make sad havoc among them. Sorrels, keep flower-stems cut away. Spinach, sow, of the prickly seeded kind, in well prepared borders; and sow in drills ten inches apart. Sweet Marjoram, see *Basil*. Turnips, sow, of the little early kinds, any time during the month, and attend to thinning and hoeing advancing crops. Should the weather be very hot and dry, *Water* thoroughly previously to sowing the various seeds, and if a little shading could be given from ten to three in the afternoon, until the plants are up, all the better. T. Weaver.

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WEEKLY CALENDAR.

M D	W D	AUGUST 5—11, 1852.	Weather near London in 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
5	Tu	Long-leaved Mint flowers.	30.297 — 30.226	71—53	E.	—	32 a. 4	40 a. 7	10 10	19	5 40	218
6	F	Prince Alfred b. 1844.	30.234 — 30.173	67—53	E.	—	33	38	10 27	20	5 33	219
7	S	Venetian Sumach flowers.	30.056 — 30.014	75—55	N.E.	—	35	36	10 45	21	5 26	220
8	Sun	9 Sunday after Trinity.	30.018 — 29.988	80—52	N.E.	—	36	34	11 7	☾	5 19	221
9	M	Purple Melic flowers.	30.034 — 29.964	69—55	N.E.	—	38	32	11 34	23	5 11	222
10	Tu	St. Barnaby's Thistle flowers.	30.085 — 30.075	71—53	N.E.	—	40	31	morn.	24	5 2	223
11	W	Dog Days end.	30.106 — 30.098	79—52	S.	—	41	29	0 8	25	4 53	224

Meteorology of the Week.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 75° and 51.8° respectively. The greatest heat, 93°, occurred on the 10th in 1842; and the lowest cold, 36°, on the 6th in 1833. During the period 104 days were fine, and on 71 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

(*Continued from page* 250.)

AQUILEGIA. COLUMBINE.

Generic Character.—*Calyx* none. *Petals* five, below the fruit, egg-shaped, mostly pointed, nearly flat, equal, spreading. *Nectaries* five, equal, alternate with the petals, each of them tubular, gradually widening upwards, oblique at the mouth, the outer margin ascending, the inner attached to the receptacle; their lower portion extended into a long tapering spur, blunt at the extremity. *Stamens* numerous, thirty to forty, awl-shaped, erect; the outer ones shortest; innermost barren, thickened, and wrinkled, closely enfolding the germens. *Anthers* terminal, heart-shaped, erect. *Germens* five, oblong, egg-shaped, tapering into awl-shaped upright *styles*, with simple *stigmas*. *Seed-vessels* (*follicles*) five, cylindrical, pointed, parallel, straight, of one valve bursting at the inner side downwards. *Seeds* numerous, egg-shaped, smooth, keeled, at the edges of the seed-vessel.

Aquilegia vulgaris: Common Columbine.

Description.– It is a perennial. *Root* tuberous. *Herbage* smooth and naked. *Stem* erect, two or three feet high, somewhat leafy, round, generally branched, and bearing several flowers. *Root-leaves* on long stalks, twice 3-leafleted; leaflets broadly wedge-shaped, bluntly lobed and cut, milky-green beneath; those on the stem more simple, and nearly stalkless. *Stem-leaves*, hand-shaped, with oval entire lobes. *Flowers* hanging down, bright purple, on purplish, somewhat downy, stalks. *Petals* pointed. *Nectaries* much incurved at the end of the spur. *Germens* and *Seed-vessels* hairy. There is a sub-species with stems one-flowered; smaller size, and spurs less curved.

Places where found.—In meadows, pastures, and thickets. Not common.

Time of flowering.—June and July.

History.—We think the botanical name is derived from *Aquilex*, a conveyer of water by pipes, referring to the tubular form of the nectaries. The English name is derived from *Columba*, a dove, from the fancied resemblance of the nectaries to the head and neck of that bird. The usual colour of the flowers, when wild, is pale blue, but they occur of other tints, and in gardens they appear with their petals and nectaries doubled in various modes, and of still more dissimilar colours. All parts of the Columbine have been recommended for use in medicine, but it belongs to a dangerous tribe, and Linnæus knew of children killed by an excessive dose of it. Probably the only mode of employing the Columbine beneficially, is by making a tincture of its flowers, adding to it a little sulphuric acid, and employing it as a wash for scorbutic affections of the gums. Goats eat it, but other domestic animals reject it. As the form of the nectary prevents the bee obtaining its honey in the usual mode, this insect tears an entrance near the bottom of the nectary to enable it to introduce its proboscis. The Columbine has been made, says Mr. Phillips, the emblem of Folly, but whether on account of the party-colour which it frequently takes in the garden, or in allusion to the shape of the nectary, which turns over like the caps of the old jesters, and those which painters give to Folly, we are left to surmise. In some country places, W. Browne, the poet tells us

> "The Columbine in tawny often taken,
> Is then ascribed to such as are forsaken."

Returning to the subject of the early history of Poultry, where we left it at page 236, we must commence by observing, that in our earliest printed work upon English farming, Sir Anthony Fitzherbert's *Boke of Husbandry*, published in 1532, there occurs no other notice than the following, under the title of "*What warkes a Wyfe shulde do in generall.*"

"Thou must gyve thy poleyn (pullen, or poultry) meate in the mornynge, and whan tyme of the yere commeth thou must take hede how thy hennes, duckes, and geese do lay, and to gather up theyr egges, and whan they waxe brodye, to sette them there as noo beastes, swyne, nor other vermyn hurte them. And thou must knowe, that all hole (whole) footed fowles will sytte a moneth, and all cloven footed fowles wyll sytte but three wekes, except a peyhenne, and great fowles as Cranes, Bustardes, and suche other. And whan they have broughte forthe theyr byrdes, to see that they be well kepte from the Gleyd, Crowes, Fullymartes, and other vermyne."

We may observe, also, judging from the prices, that poultry were scarce at that period, for money was then of much greater value than in the present century. Thus we have before us a memorandum, made in 1536,

"That it is agreed by compositions that the Fellowship of the Poulterers shall serve the King's Majesty (Henry VIII.) with these kinds of poultry stuff following, on the price as here after appeareth."

"Pecokks, old, the pece, 2s.
Pechykks, the pece, 14d.
Capons of gr(owth) of the best, the pece, 20d.
Capons good the pece, 14d.
Capons the pece, 8d.
Hennes of gr(owth) the pece, 7d.
Grene Gesse from Ester tyll mydsommer, the pece, 7d.
Geese grett (great) from mydsommer tyll shroftyde, the pece, 8d.
Eggs from Ester to Myghelmas, 16d. (the dozen.)
Eggs from Myghelmas tyll Ester, 20d. (the dozen.)"

Passing over Tusser's *Five Hundred Points of Husbandry*, which barely touch upon the subject of poultry, we come next to Barnaby Googe's translation of Heresbach's *Four Bookes of Husbandrie*, published in 1578. The text of Heresbach is no more than a compound from the works of Cato, Varro, and Columella, but Googe introduces some additions, one of which we shall separate from the less interesting contents:

"Your Henne houses must bee made in that parte of your house, as lieth in the Winter towarde the risyng of the Sunne, and ioynyng as nere as maie be to some Kille, Ouen, or Chimney, or to the Kitchin, so as the smoke maie come amongeste them: for smoke is verie holesome for this kinde of foule. And that was (I thinke) the cause that the old people made choise in their quitrentes of smoke Hennes, as of the beste, as it appeareth by olde Rentalles. Lette the front of your Henne house stande alwaies towardes the Easte, and to that coaste let the doore open. Let the inner roomes bee well furnished with Loftes and Lathers, and small windowes openyng Eastward, at which your Poultrie maie flee out in the mornyng, and come into the roust at night. Looke that you make them close at night, and let the windowes bee well lettised for feare of Vermine. Let your nestes and lodgynges, bothe for laiyng and broodyng, bee orderly caste, and against euery neste and roustyng place, place steppes and boordes to come up by, making them as rough as maie be, that the Hennes maie take good hold when thei flee up to them, and not by their ouer smoothenesse, bee forced to flutter and hurte their Egges. It shall not bee amisse, if you pargette the house bothe within and without with good Plaister, whereby neither Weesell, nor other hurtfull Vermine maie enter in. Boorded floore are not for foule to rouste upon, whiche almoste all kinde of Birdes refuse, because of the hurte that thei receiue by their dounge, whiche if it cleaue to their feete, breedeth the Goute. And therefore to roust upon, you must make them perches, which *Columella* would, should be made fower square: but it is better to haue them rounde, so that thei be not too smoothe for them to take holde by. Let the Perches reache from one side of the wall to the other, so as thei stande from the floore a foote in height, and twoo foote in distaunce one from the other: and thus haue you the fashion of your Henne house. The Courte where thei goe, must bee cleane from doung and durtinesse, not hauyng water in it, sauyng in one place, and that must be verie faire and cleane: for if it bee pudled, or durtie, it breedeth (as I saied before) the Pippe. To keepe their water cleane, you maie haue faire earthen, or stone vessel, or troughes of Wood, couered in the toppe, in the whiche there muste bee seuerall holes so bigge, as the hed of the foule maie easely enter: for if you should not keepe them thus couered, the Poultrie would in their drinkyng defile and poison it with their doung. Their meate muste be given them betimes in the morning for straiyng abroade, and a little before night, that thei maie come the tymelier to their reste. Those that bee in the Coope, must (as *Columella* saieth) be fedde thrise in the daie: the others must be used to an acquainted voice, that thei maie come at the callyng. The number must bee well marked: for thei sone deceiue their keeper. Beside, you muste haue rounde aboute by the walles, good plentie of duste, wherein thei maie bathe and proine them selves: For as the Swine delighteth to wallowe in dirte, so dooeth this kinde to bathe and tumble in the duste. And this is (I thinke) almoste al that is to be saied of Pullein."

FORSYTH MSS.

The letters of the next person eminent in the republic of science, which occur among these manuscripts, are a few—would they were more—from Francis Masson. He was of French extraction, but being well skilled both in the botanical and cultural knowledge applicable to garden plants, he was enrolled among the number of the Royal gardeners at Kew, and was the first, in modern times, we believe, despatched under royal patronage from England especially for the purpose of collecting from other lands their floral novelties. The first region he was required to examine was the Cape of Good Hope, and the results of his researches are narrated in the 66th volume of the *Philosophical Transactions*. A contemporary thus epitomises the narration:—

"Our botanical traveller, in his first journey, which was performed in Dec. 1772, and Jan. 1773, went as far as Schwellendam, a place about 150 miles N. E. from the Cape Town; but, finding the season too far spent for making any considerable collections, returned back to the Cape by the same road he went. He was attended by a Dutchman, and a Hottentot, who drove his waggon, which was drawn by eight oxen—the manner of travelling there. In this journey, however, he collected the seed of the many beautiful species of *Ericæ*, which have succeeded so well in the Royal Garden at Kew.

"His second journey, begun in Sept. 1773, was performed in company with Dr. Thunberg, a native of Sweden, who was sent out by the Dutch to collect plants at the Cape, and is now on that errand in the East Indies. In this journey, which lasted four months and fourteen days, our travellers were very successful in their botanical researches, collecting many plants and shrubs that were new, but which were dearly purchased, considering the fatigues and dangers here recounted. And probably neither they nor their plants would have been heard of more, had not the servants been wiser than their masters, by refusing to advance farther, or to venture among the Caffres, a savage race, who, they said, would kill them, were it only to get the iron belonging to their waggons.

"In his third journey, Dec. 1774, Mr. Masson proceeded as far as the last Dutch habitation, 550 miles N. from the Cape, and then changed his course, going S. E. On the whole, he has reason to congratulate himself on being now safe in Kew Gardens—escaped from torrents and precipices—from deserts and lions; and as to the succulent plants and aromatic shrubs thus procured, we cannot help comparing them to the water of Bethlehem, which *three mighty men* drew, *in jeopardy of their lives*, and which *David therefore*, though he had longed for it, *nevertheless would not drink, but poured it out unto the Lord*." (2 *Sam.* xxiii. 16.)

Mr. Masson remained at the Cape more than twenty years, for the following letter is dated there on the 15th of May, 1793:—

MR. F. MASSON TO MR. FORSYTH.

A few days ago I received a letter, dated May, 1791, from T. Hadley Swain, secretary to the Natural History Society, of which I am an unworthy member. I have long had a sincere desire to contribute something, but my constant attention has been in botanical researches, and the animals of this country are, I believe, pretty well known. The fishes here, I believe, are little known, and would be some addition to natural history. I have collected many of them, and made some drawings; if they can contribute anything to the advancement of science they will be much at their service. I am busy at present describing and drawing the *Stapelias*, of which I have discovered about thirty new specimens, and I believe that there are many more, but they grow at such a distance from the Cape, and in so unfrequented places, that it is very difficult to find them out.

We have had a ship here from Port Jackson for provisions; by the accounts by her the place is not so bad as it has been represented. Captain Paterson returns from Norfolk Island there.

I send this by Mr. Goodsman, a British officer, with a small chip box containing two specimens of a large species of Chiton, which I do not remember to have seen before. I beg you will present them to the Society for their inspection.

The collection of the succulent genus to which he alludes in the above letter, was depicted and described in a work he published at London in 1796, entitled, *Stapeliæ Novæ*. Like other searchers after the natural treasures of foreign lands, the love of change, the desire for discovery, and impatience under restraint, predominated over all other considerations; and, after a year's residence in England, with the king's permission, he sailed to America. One or two letters from him, dated Montreal, at the close of 1801, occur among these manuscripts, but they allude to no subject of importance, nor were his researches in the far west compensated by any discoveries at all to be compared with those which rewarded him at the Cape. From North America he proceeded to the West Indies, and died there, in the island of Montserrat, at the close of 1806, in the 64th year of his age.

GOSSIP.

Messrs. Weeks and Co., of King's Road Nursery, Chelsea, have the following *Water Lilies* doing well in an open heated pond:—*Nymphæa dentata*, *N. cyanea*, *N. cærulea*, *N. rubra*, *N. alba*, *N. hybrida*, *Victoria regia*, *Limnocharis Humboldtii*, and *Aponogeton distachyon*. The six first flowering nicely.

Our respected correspondent, *S. P.*, *Rushmere*, having recently visited the Channel Islands, says—

"One of the first things which attracted my notice, on landing in *Jersey*, was a printed bill, announcing the *Royal Jersey Floricultural Exhibition*. This was held, July 14th and 15th, in the Cattle Market, at Minden Place. On entering, the productions were seen arranged under the colonade, which forms three sides of the square, affording both shade and space to the visitors. On the second day was a *déjeuner* at half-past four, to which parties were admitted by tickets at five shillings each.

"In *Vegetables*, with the exception of being forwarder for the season than with us, there was nothing remarkable; the lettuces and potatoes were, however, decidedly fine.

"The *Fruits* were better. A mixed basket belonging to a Mr. J. Robin, of Petit Menage, containing a pine apple in the centre, and surrounded by grapes, currants, gooseberries, &c., attracted much attention, and obtained a first prize. Apricots, peaches, cherries, strawberries, raspberries, were good, but our English cultivators of these fruits have nothing at present to fear from the Jersey gardeners. A new cherry, which was exhibited by Mr. B. Saunders, one of their leading nurserymen, and called *Merveille D'Hollande*, elicited considerable praise.

"The *Flowers* were not up to those of many of our English provincial exhibitions, either in variety or perfection of cultivation. The specimens of Heaths, Calceolarias, Geraniums, and Pansies, were second-rate; Celosias, Ixoras, and Carnations, good; and the show of annuals, biennials, and perennials, with the exception of a stand of capital Sweet Williams, were few and inferior, probably owing to the heat and dryness of the season; this affected also the roses, of which there were but few. Three large bouquets of cut flowers, upon tables in the centre pavilion of the square, were the best things in the exhibition; here, also, was the band of music, with seats placed round for the visitors, who were said to be not so numerous as on former occasions.

"To the lovers of flowers, Jersey offers many attractions in its prettily-cultivated suburban gardens; here the plants assume a vigour of growth and perfection seldom attained in England. Climbers of various kinds cover the verandas, and fronts and ends of many of the houses; whilst Geraniums, Fuchsias, and Verbenas, display their beauties in full luxuriance under and up the sides of the windows: and, as an example of the mildness of the climate, I noticed, in one of the gardens at St. Heliers, a yellow Calceolaria, named by the owner and raiser *Capensis*, about sixteen feet round, three feet high, dense in foliage, and with at least 200 flowers upon it, in fine corymbous heads, of the size of large oranges; it had stood out in the open ground, without protection, for the last seven years. In another garden, at St. Aubins, my attention was caught by an *Hydrangea*, full thirty-six feet round, four feet high, circular in form, and having at least 2000 flowers—a complete dome of purple. The gentleman in whose garden, or rather court-yard, it grew, said he bestowed no particular attention upon it, beyond cutting out in the spring the dead flowers and some of the old wood; it grew in the ordinary soil, which is a debris from the granite rocks in the vicinity, and as these appear to contain much ferruginous matter, it may probably account for the almost universally blue colour of the Jersey Hydrangeas.

"*Carnations* and *Pinks* are another class of flowers much cultivated in the Jersey gardens, and many of the choicer collections of these are truly splendid. Two shillings per hundred was the price asked me by one of the best growers for young seedling plants, and I brought away as many as I could find room for in my carpet bag. *Phloxes* do not appear to do well with them; the colours run; in other words, they want distinctness and brightness; a circumstance perhaps attributable to the hot sun, and dryness of the soil; but floriculture in Jersey appears to owe less to skilful cultivation than to its genial climate. The taste of the people turns more to fruit and vegetables. The Charmontel pear, apples, figs, &c., so crowd the gardens, that nothing short of the natural capabilities of the island could insure the perfection to which so many things attain. The *Jersey tree-cabbage* often occupies much space; from the stems of these walking-sticks are made; and when dried and polished they are light and handsome. *Fuchsias* assume the character of small trees; at least, I saw some ten and twelve feet high, with stems as thick as my wrist.

"The walks and rides in Jersey are delightfully romantic. Its cliffs and bays, its shady lanes (the latter forming a complete network over the island); its numerous orchards, with the pretty Jersey cows tethered under the shade of the trees; its rustic farm-houses and ornamental cottages in which the English chiefly reside, are met with at every turn. The hills, in addition to their inland and sea views, abound in many wild plants; amongst them I noticed Harebells and Alpine Pinks of two or three colours, the *Lotus corniculatus Centaureas*, &c.; the latter bloom on the tops of the stone-walls in conjunction with the *Antirrhinum* and *Red Valerian*, displaying their blossoms above the dense mass of creepers that clothe their sides. Occasionally may be seen among the heaths the beautiful and harmless emerald green lizard

sporting in the sun (and restricted in its locality in England, I believe, to Blackheath); these, and the many insect tribes, furnish abundant interest and pleasure to the tourist and lover of natural history.

"The fruit, vegetable, and fish markets of St. Heliers will well repay a visit, not omitting even the cattle market, in which may be seen the beautiful Jersey cows, led about by women with halters, who act the part of vendors. A pair of these tractable animals we brought away on board our steamer. By the address affixed to their horns, I saw they were for some gentleman in Connecticut, United States, and thoroughly pitied them, both for their change of home and their voyage."—S. P., *Rushmere.*

Another correspondent says—

"I made a mistake in stating the *Standard* Pyrus Japonica to be twelve feet high, and, therefore, wish to correct it. The one I have is on its own roots, and has several stems rising from the soil. It is ten feet within an inch or two, and is seven feet in diameter at the base, and trained as a pyramid. I expect to see it much higher than it now is; when I took it in hand, it had been left to run wild, and though then a splendid specimen, nothing compared to its present appearance. This last season it was a mass of flowers from the ground to the top, and was a most gorgeous sight. It is a very old tree. One against a trellis, which has only been planted four years, is twelve feet high, and was it not stopped on account of a Wistaria running above it, would grow higher."—*Evesham.*

The wetness of June seems to have been very promotive of vegetable diseases connected with the development of fungi. The *Potato disease* is very virulent upon the leaves in Devonshire, Cheshire, and Hampshire; but we have not heard of any serious attack upon the tubers. If we have a dry August we think the loss will be small. Wherever the haulm is turning yellow we recommend the crop to be taken up, and stored forthwith in a dry shed, and in dry earth, ashes, or sand. We are sorry to find, also, the *Vine mildew* very prevalent in Hampshire.

It appears from the returns prepared by the Board of Trade, that during the five months ended the 5th of June last, we imported no less than 52,338,676 *eggs,* the whole of which were entered for home consumption. Of these, two-thirds were delivered to supply the London markets. The average monthly consumption of foreign eggs is 15,000,000. We hope to see the day when this importation shall cease, owing to the more general keeping of poultry.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Allendale, Sept. 11th. (*Secs.*, G. Dickinson and G. J. French.)
Bath, Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)
Bridgewater, Sept. 22. (*Secs.*, Mr. J. Leaker and Mr. J. Hayward.)
Brigg, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
Bury St. Edmunds, Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
Caledonian (Inverleith Row), Edinburgh, Aug. 7, Sept. 2, Dec. 2.
Cheltenham, Aug. 26.
Clapham, Sept. 11.
Colchester and East Essex, Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Durham, Sept. 8.
Forfarshire (Eastern), Sept. 15 (Arbroath).
Glasgow, Sept. 10.
Halifax, August 18. (*Sec.* E. Pholman).
Hampshire, Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hexham, Sept. 15, 16.
Hull, Sept. 16.
Kirkcaldy (Fifeshire), Sept. 9.
Lincoln, Sept. 14.
Liverpool, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), Aug. 10†, 24, Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Maidstone. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), Sept. 10.
Newbury, Sept. 3.
North London, Nov. 23, Chrysanthemum.
Northampton, Sept. 27, Dahlia.
Oxfordshire (Royal), Sept. 23. (*Secs.*, C. Tawney and W. Undershell, Esqrs.)
Peebleshire, Sept. 14th. (*Sec.*, J. Stirling.)
Ponteland (Newcastle-upon-Tyne), Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)
South Devon Botanical and Horticultural, Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), Aug. 19†, Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, Aug. 6, Sept. 17.
Whitehaven, Sept. 17, Dahlias.

POULTRY SHOWS.

Birmingham and Midland Counties, 14th, 15th, 16th, and 17th December.
Bristol Agricultural, December 7th, 8th, and 9th. (*Sec.* James Marmont.)
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).
Cornwall (Penzance), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)
Liverpool, Sept. 23.

† For seedlings only.

STRAWBERRY PLANTING.

We take blame for not pointing to this important procedure sooner; not that it is too late, but that in order to obtain a *fine* crop the first year the runners should be got out by the middle of July, or sooner, if obtainable. The providing good and early runners is, therefore, no trifling affair; so important, indeed, that the success of the next season is principally dependant upon their quality and earliness. By this, it is plain that it is not wise to leave the production of runners for planting entirely to chance, inasmuch as seasons differ; and in some dry springs and summers, we have known it difficult to obtain them well rooted until September.

In our younger days, we used to plant detached beds purposely for breeders, so that the kinds being far apart could not by any possibility become introduced; and, after all, there is no better practice. One row was put in the centre of a four-feet bed, the plants six inches apart only; and each side of the bed was cased over in the beginning of April with a good coating of half-decayed mulch for the runners to nestle in. It was the practice to water frequently whilst the runners were extending, through the month of June; and, by such means, abundance of fine runners were, in all seasons, available by the beginning of July. Now, this we recommend to every amateur who loves distinctness in his kinds, and simplicity in practice. It is gratifying to observe how speedily the runners become rooted by contact with the mulch—they are plants directly—and

in removal, a nice little ball adheres to them, of eminent service in giving the young plant a start.

It is the practice, with many, to go over the runners betimes, and to place a stone on each required for new plantations; and a very good plan it is; some, however, go farther, and plunge small pots with prepared compost in them, laying one runner on the surface of each, and placing a stone on the runner to load it. This is, indeed, the highest practice of all, but we fear few find time to carry it out. The plants may thus be planted with nice balls free from all checks. Persons possessing small gardens, and who attend to such minutiæ *themselves*, having little else to engage their time, may carry out such objects in high style; but with gardeners in the country the case is far otherwise. There is so much mowing, sweeping, cropping, kitchen-serving, fruit-gathering, flower-tying, potting, watering, blight-doctoring, slug-hunting, &c., that the gardener is obliged to adopt what are vulgularly termed, "cut-and-run" plans; and, on the old maxim, "set a thief to catch a thief," a man who has passed his lifetime amid such turmoils is pretty well qualified to advise concerning economy of labour.

It may here be observed, with regard to the *special* bed plan, first described, that, as soon as the runners have extended some three to four feet, the points may be chopped off with the spade; this, by preventing farther extension, strengthens the reserved runners, and enables the planters to get at them without trampling.

Modes of Planting.—Everybody knows that it is very common to hear the exclamation—"My strawberries run too much to leaf." Now, it sounds very well, and looks pretty on paper, to meet with slashing details about plenty of manure, &c.; but those things require some cool discretion in their application. Besides the possible waste of manurial matters, there may come the disappointment—expensive disappointment! We hear talk of market gardeners using so much manure, that, fancying all circumstances alike, folks are but too apt to cause a "run" upon the muck heap, thereby endangering its credit, totally regardless of the sayings of our latter-day politicians, that "the cost of production must be lessened." Let it not be supposed that we repudiate the benefit of manure; far from it. We set as high a value on our ordinary manure as anybody, not only for its enriching properties, but for the great value of the organic materials it is capable of imparting to hard-tilled and exhausted soils. It so happens, that very little of the power of selection as to soil is left to small gardeners, or we could at once suggest what are the best of all soils for the strawberry. It is well known that it prefers a loamy soil—a deep, sound, yet mellow upland loam. The majority of soils, however, where the strawberry *must be planted*, are such as belong to our ordinary kitchen-gardens—a friable, loose, darkish material, which has long since forgotten its origin. A slight amount of adhesiveness we hold to be a benefit to the strawberry, or, to speak guardedly, that character, which in gardening language is termed "sound," in contradiction to a loose, friable, blow-a-way earth. Where soils are of the latter character, means should be taken to alter the staple itself, independent of manurial application. Marl, where it is near, is a capital application for loose and hot soils, and as our Cottage Gardener travels in all directions, and has to advise under almost every existing condition of soil and circumstance, it requires something in the way of advice to carry out its duties and its objects.

We have known loose, black soils, on which strawberry culture had signally failed, made to produce them in abundance by the application of clay marl. It is very probable that chalk, where obtainable, would be beneficial as part dressing; strong loam, also, may be liberally employed; or even clay, if the others cannot be obtained. This advice, of course, applies simply to the correction of the staple for permanent plantations; but what is termed "*the frequent runner system*" is the best policy. We heartily pity those who witness the decline of old plantations, year by year, without an effort to renew their stock. This is a sad waste of land; and when it is taken into consideration how very desirable it is to change the site for crops frequently, in furtherance of a proper rotation, the omission becomes doubly pernicious as to its effects on a gardening system. Of course, in making what is termed a new plantation, to remain three or four years, some manurial matters are necessary, and, above all, deep digging. The soil should be half-a-yard in depth, if possible. Our practice has been to work fresh manures in the lower portion of the trench, for durability, and to introduce a more decayed material within a foot of the surface. This "sets the plant on its legs" betimes, and in a twelvemonth's time, the manure becoming somewhat exhausted, the plant is prevented becoming gross at the period it is most inclined to do so. The amount of manure must, of course, be regulated by the condition of the soil. It is almost needless to observe, that if the staple of the soil is too adhesive, opposite means must be taken to correct its tenacity. Here, sandy materials, old lime rubbish, cinder-ashes, or other burnt materials, sandy heath soil, &c., with the addition of lime, may be called to the aid of the planter. The larger sorts, as the *British Queen*, *Goliah*, *Keen's Seedling*, &c., should be allowed nearly three feet between the rows, and the plants placed one foot apart, with the design of cutting away alternate plants in the second season.

Thus much for the old practice of permanent plantations: we come now to what we consider a superior practice. When we take into consideration the length of time that must elapse from the founding a new plantation in July, to the fruiting of the plants, and the extent of ground occupied, it becomes a question, whether the plants could not be encouraged as mere nursery subjects for a portion of the time, thus enabling the cultivator to work other crops for awhile. Market gardeners *may* spare their acres for standard plantations, but most small private gardens are of so limited a character, and the demands on them so multifarious, that the occupying even a pole or two of ground from strawberry planting time to November, or February, with young strawberry plants, becomes a serious encroachment on the vegetable cropping. That strawberry-runners, pricked out in the early part of July, on rich soil, in an exposed situation, and removed to their fruiting quarters in the end of October, or even in the early part of the ensuing February, *will* produce a *first-rate* crop, we are well assured, having long practised it; and this is the course we recommend to the readers of this work. If the old plantation mode be adopted, every one is tempted to introduce other crops between the rows, "to make the most of the ground," as it is termed; and the mischief that occurs through trampling, &c., is always considerable. Select, then, we say, a sunny plot; if a wall-border, so much the better. Make the surface, for six inches in depth, rich with old manurial matters; and prick the young plants out here as a nursery, at about eight or nine inches apart. They must be liberally watered until thoroughly established, and growing strong, and, of course, all weeds kept under; and by the end of October they will be found to be stout, compact plants, with firm buds.

In this practice we lay much stress on the ground being shallow, rich, and fully exposed to the whole day's sun. The shallowness recommended may astonish some; but, in such cases, we must banish prepossessions, and see whether, having chalked out a definite object, the means are really adapted to the end

in view. And what is the object? Why, to obtain an early, quick-grown, and stout plant, which, by an early cessation of growth, shall organise a plump and well-ripened bud. The three first points are gained by early runners and rich soil; and the latter is induced by shallowness, whereby the plant, having exhausted its rotten manure, and the fibres being in contact with the poor and hard soil beneath, is hastened into a state of partial rest, or, more properly speaking, a high degree of elaboration is induced. This practice, at first adopted as a rational theory, has been amply confirmed in practice, and leaves, in our opinion, nothing to be desired. The very best time to remove these to their final destination is the end of October; and they must be removed *carefully*, with compact balls of soil, the ground having been duly prepared for their reception. They will lay hold of the new soil immediately, and the slight check experienced, just serves to prevent an undue production of foliage in the ensuing spring. R. Errington.

BEDDING GERANIUMS.

I watched at all the London great exhibitions for this useful class of plants, and I saw, on the whole, more than I expected to meet with; some old ones, of which I had no previous opportunity of comparing together, as the different varieties of Geraniums which take after *Lucia rosea*, pleased me much; then the new variegated ones; after them the sport from *Diadematum rubescens*, now called *Wilmore's Surprise;* and lastly, and for some gardens the best of the season, a real *scarlet Ivy-leaved Geranium.* This new "Ivy-leaf" was exhibited at Chiswick, and at Regent's Park. I did not learn how the judges dealt with it.

Let us take them in the order here set forth—*Princess Alice, Hydrangiflora, Tom Thumb's Bride*, and *Rosea compacta*, are all varieties from *Lucia rosea*, or from *Mrs. Rodham's Pet.* With the exception of the first, *Princess Alice*, which I received direct from Mr. Ingram, Her Majesty's head gardener at Windsor, who raised it, I did not grow any of these; so that my estimate of their respective merits is taken from the single plants exhibited. *Princess Alice* has the best flower, and comes nearest in leaf to *Lucia rosea*, with a higher and better colour. *Hydrangiflora* had more trusses, and more spreading flowers, but the truss and flower were smaller than in the Princess; yet, for a bed, box, or vase, I should say the smaller were the best of the two, because, with the very same habit and style of flowering, I never saw anything come up to *Judy*, treated on Harry Moor's plan. *Tom Thumb's Bride* is third in order for flowers; but they again were more numerous than on either of the others, and as numbers go before quality, with some people, I must leave others to determine which of the three to choose; for my own part, I would grow the three, and throw away *Lucia rosea*, and *Mrs. Rodham's Pet*, a kind which is hardly known about London, but it is as old as *Lucia*, and was first sent out from Colchester, and it had a prize at Ipswich before *Lucia* got any prize at all. *Rosea compacta* is certainly a very pretty thing; the habit or growth is dwarf, the leaves small, smooth, and shining, like those of some plain scarlet, and the flower is of a deeper rose, as in *Lucia rosea*, but without any white. For a low pink bed, if it stands the sun well, it will match with the pink Ivy-leaf, and so increase the number of kinds of plants which one can get into an arrangement of beds without increasing the number of colours; and this was always a great point with us at Shrubland Park. Indeed, it often happens, that one has to plant four corner beds, or, at any rate, four beds in some part of a geometric figure, and that they all must be of the same height, and also of the same colour. Then, instead of planting the four with one kind of plant, which is the shortest and easiest way for the gardener, ladies are always more pleased to find four different sorts of the same habit and colour to fill up the bed, and when that cannot be had, they must have them in pairs, two and two. No one, without being cock-eyed, would plant four match beds with three kinds of plants, let them come ever so near in colour and in height. The same rule holds good in the drawing-rooms, when plants are placed there in all parts of the house the same, and also in conservatories. People who take their notions of *flowering* a house or room from a London route, where plants are "furnished" at so much a score, are satisfied if the house is full of flowers placed anyhow; and it is much about the same in their flower-gardens; but people of taste would often rather go without flowers for a time, than have them placed stupidly about without order or arrangement. These are the readers who value hints about match plants, or beds, or plans of flower-gardens, and for such, *Rosea compacta* will come in useful to match the old Ivy-leaf. It must be recollected, however, that I have had no experience of its growth, and that I may be deceived in it altogether.

Mr. Kinghorn's new *variegated Geraniums* are certainly very nice things in the flower-garden. The one called *Attraction* is particularly so, and in leaf comes nearest to the *Golden Chain* in interest; between the white and green, in the centre of the leaf, comes a brownish-purple ring, making three distinct colours in each leaf; and if this peculiarity holds on under a full sun, and a free system of bedding growth, this sort will be as much sought after as the *Golden Chain.* I once had the same marking on a seedling, but it would not stand in an open border; and I well recollect having had some cuttings of a variegated geranium from Bath, some of which turned this way while in the cutting-pot, and my foreman, Mr. Cole, of Oldford, near Birmingham, had a good laugh at my expense, for believing that two kinds of variegated were sent us; but we both failed in stamping the mark on any of the plants. The marking on *Attraction* seems much better, and looks as if it would stand under all treatment.

Wilmore's Surprise is a very rich and gay bedder. It is the fourth variety we have of the Diadematum breed, and is itself a sport from *Diadematum rubescens.* It is the one that was talked of two years since as having been supposed to be a cross between a hollyhock and a geranium. If it flowers as freely as *Diadematum* or *Diadematum rubescens*, it will far surpass all the bedding ones of the race of old ones. The Messrs. Lee, of Hammersmith, had six or seven plants of it at the Regent's Park Show, and they looked all that one could desire. I have also flowered it myself, and it is the same as the one I called *Monstrosum*—a name which I must give up—but visitors would not let my poor plants show what they could do, and I know no more of it; but all admirers of the race of bedders ought to have it for next year.

I could not hear to whom the new *Scarlet Ivy-leaf* belonged, but I saw it twice, and there can be no mistake about it. It must be the most valuable seedling, or sport, for the terrace and geometric flower-gardener that has been got these ten years. I heard of it last autumn, but I took it as said to be, from the pink ivy-leaf, and that I knew could not be, because that is perfectly barren; it is from the other section or species, the one represented by the *Trailing White Ivy-leaf*, and if it runs as much as the white, it will be still more useful. It was called *Fitness Seedling, or Fitness Ivy-leaf*, I forget which.

Geraniums, like vines, and many florists' flowers, are so altered by different soils, that what is first-rate in one district, may be not worth growing in some other

localities not far off. A great florist, who planted out nearly five hundred kinds of geraniums, and who gave me a kind invitation to go and see them, writes me this morning, that all the *Fancies* have so far failed with him, that they will not be fit to be seen before next September. He has them on clay, and he tells me of another great florist who has them in light sandy soil, and they are looking very well; to this I can add my own mite, and say, if this light soil was over chalk it would be worse than the clay for them. What the *Fancies*, and all other delicate geraniums, delight in, is a light, mellow loam, made more sandy, and very rich on the top, so as to give them a start at once, for as sure as they once get stinted by cold, or wet, or bad soil, at first turning out, so sure will they go against you that season. If this kind of soil is on a damp bottom, all the better; but no manure in any form should go much below the very surface for them when the bottom is moist.

It is not very lawful to write about what one sees in a private garden, without consent; anybody may carry and tell tales from a public nursery, but where one's house is one's own castle, one's garden ought to be free from public criticism. But Fellows of the Horticultural Society, and their July visitors, have the privilege, through the kindness of their President, the Duke of Devonshire, to see one of the finest and best kept flower-gardens in the neighbourhood of London; of this I took advantage on the last exhibition day, and to add to my list of newish geraniums, I saw a *Lilac Unique* there, which will be a good acquisition. I saw it also at one of the shows, and I think with Mr. Appleby, except in the flower, there is not the slightest difference between it and the old *Unique*. *Punch*, and *Compactum*, were there; and it struck me at the time, that *Punch* will be a London favourite some day, when Mr. Edmunds shows them in this beautiful garden how to grow it; but if he grows it in pots and vases, it is more than ever could be done by the raiser of it. D. Beaton.

STRAWBERRY PLANTS—PREPARING FOR FORCING.

Many people resemble the woman with a huge nose, who thought that everybody was speaking about her. It is right to be honourably sensitive; of all disagreeables, save me from coming in contact with a *thin-skinned* person. "Think before you speak," is, no doubt, a maxim stamped with ancestral wisdom; but what a bore and a drag to be keeping it in view when enjoying the delights of free, social intercourse. And yet, think a hundred times, and you will not be safe; these thin-skinned gentry will look upon some most innocent remark, either as a personality, or an invasion of their peculiar province. With such worthies for a crew, what an *enviable* position our Captain Editor would have! I have not yet seen Mr. Robson, but I seem to know him so well, as to find no difficulty in believing that in these matters he is as *invulnerable* as the rest of us. In the heading of this article, I seem to skirt that gentleman's domains, and get inside the fence of friend Errington's preserves. For everything connected with the forcing of the strawberry, I might refer, implicitly, to that friend's directions. What, then, are my reasons for adverting to the matter here? First; because it is so far within my peculiar province, that numbers of enquiries reach me—how strawberries are to be got three weeks or a month earlier in a greenhouse than out-of-doors? and complaints, loud and deep, have come—how that this season they have been so disappointed, from the red spider getting on the strawberries, that to save the vines and greenhouse plants they had taken out the strawberries long before they were *ripe*. And, secondly; because there are one or two points connected with the treatment of these plants afterwards that deserve to be better known, though I am pretty sure that I alluded to the subject in some periodical years ago.

Before this reaches the reader, it will be too late to begin *preparing plants* for early forcing. I have tried many methods. For general purposes, I prefer laying a runner in a small pot, cutting it off when rooted, and then transferring into what is called a 32 or six-inch pot. I think by this means the ball of earth is more thoroughly filled with roots than when the young plant is layed, or planted, in a six-inch pot at once, in which case the outside of the ball is the densest with roots. For very early work, I prefer five-inch pots. I would here, however, refer to the directions of Mr. Errington, and others. It is not too late to prepare plants, when it is intended to put them in the greenhouse by the middle or end of March. It would hardly be worth while to go through the process of layering, as in going along the beds you will find nice-rooted young plants, which might be potted in six-inch pots at once, or into 3½-inch or four-inch, to be again transferred to a six-inch pot. The six-inch I prefer for common fruiting purposes, with one plant in each. When at first, or ultimately put in the fruiting-pots, the following *trifling* matters are essential to ultimate success:—

1. The soil should be rich, open, and fresh, partaking of a loamy character. 2. The bud, or crown, of the plant should stand well up in the centre, and rather above the rim of the pot, as it will be sure to sink. 3. The soil must be put carefully among the roots, and it can *scarcely* be pressed too firm, if in the medium state of being neither wet nor dry. 4. The plants should be shaded a little first, until growth is freely proceeding, and then placed right in the sun, and on a hard bottom. 5. Soot, or any other manure water, alternately with clean water, may be given until the middle of October. 6. Then, in wet weather, the pots should be laid on their sides, and only set up when the weather is fine and sunny, and no water given unless the leaves flag. 7. In November, the plants may be put in their winter quarters, plunged among anti-worm materials in a border, to be protected from heavy rains or severe frosts—built in ridges to be so protected—or, what is better than all, plunged in a pit, with either a glass or waterproof covering over them at will. 8. When placed on a shelf, near the glass in the greenhouse, in the end of March, or beginning of April, see that they do not wait for water, but use it rather sparingly before the flower-trusses show themselves; then give manure waterings, syringe with clear soot-water repeatedly, and if a trace of spider appears, use the hydro-sulphuret of lime. 9. The best sort for such use is the *Kean's Seedling;* the earliest, and yet good, the *Black Prince;* the finest fruit, but later than both, the *British Queen*.

"Well what a trouble, and about a few strawberries!" Aye, so it is. Some consider it a misfortune. I hold it to be the very reverse; that what is worth having, costs trouble and labour. "But is there no made-easy mode for getting these strawberries earlier than out-of-doors, and with less labour than a whole summer's attention?" Oh many! I will instance two. First, instead of potting, *plant* out the young plants on a south border, made rich and well dug, and from six to nine inches apart. Give them plenty of rich watering, keep them free from weeds and runners, and stick a few branches among them during winter. In the first days of March, take up the plants with large balls, and pot them firmly. Previously to that, from the stable, cow-house, and poultry-yard, and sweepings and prunings from the lawn and shrubbery, concoct a rough, slight hot-bed, that will maintain a bottom-heat temperature of from 60° to 70° for a fortnight. In this bed plunge the pots, set a frame over them, but with air on back and front; the object being

not to excite the buds, but to fill the pots with roots by the time the extra heat is gone; then the plants will receive no check in being moved to the shelf in the greenhouse. "But why not leave the plants in the frame?" Because, if you did so, you must thin them to something like a foot apart; because even then they would not be so well supplied with light as in an airy greenhouse; and because, finally, if you left the pots without placing them on some hard substance to prevent the roots going freely into the dung, you are likely to be rewarded with better leaves than fruit.

But the second mode is more simple still, on a similar border, or on a steep, sloping *bank*. Put out your young plants a foot apart; attend them carefully; protect a little during winter; and in March or April cover them with shallow boxes and glass sashes. In ordinary seasons you will forward the fruit a fortnight; in dull weather they will scarcely be forwarded a week; in bright sun, after flowering, they will precede those in the open air nearly three weeks.

But now, *secondly*, supposing that we grow the plants in pots, what is to be done with them afterwards? Throw them away? No; that used to be the custom; gardeners know better now. It is now getting common to plant them out carefully, and here, as in a lady's postscript, is the gist of my article. What are the objects? First, to obtain from early-forced ones a second crop in September, or towards the end of August. This I have done for more than a dozen of years. I question if I shall not be disappointed this season. Contrary to usual custom, owing, I suppose, to the heat and dryness of June, the plants which bore a heavy crop in March are now again in full bearing, and I have been picking eight days before this (26th July), when they were of little or no use to me; others, however, keep throwing up buds. Now, as respects this second crop, I never got much from plants turned out as late as June; and that would be the case with most of our greenhouse friends, and yet to them I would also say, plant out your plants carefully; and my reason,

Secondly is, *That these plants will produce more abundantly*, in the open air, next season, than any other young or old plants treated in other respects in a similar manner. I have proved the matter for years, and demonstrated the fact to hundreds. It seems to make little or no difference whether the plants fruit in the autumn or not. My common Keen's Seedling have been fair. Those under the treatment, in armfuls. The theory of the thing I will not now enter upon, as when the matter was mentioned in conclave there seemed to be diversity of opinion. Of the fact itself, there can be none, especially in all soils that are stiff and cold. It applies to all kinds, early and late—early forced, or merely forwarded in greenhouses. Many adopt the system now as a mere matter of routine. I lately met Mr. Judd, whose Queens—so much admired at Chiswick, in May—had, a few days previously, taken off the honours at Northampton, and his practice entirely coincides. He told me that in his cold ground he could do no good with British Queens, Alice Mauds, &c., from planting young plants, but that his turned-out forced ones did *well*.

One word more. Such plants *do not continue to be prolific*. I have had them good for several years, by extra care in thinning and surface dressing, but in general they do splendidly the first year; fairly the second; and but so-so the third. Where room is scanty, they should never stand above the second year; for a splendid effect, never after the first summer. I trust that our friends in future, who place thirty or forty pots in their greenhouse oven, will give each plant, when done fruiting, a space of fifteen or eighteen inches square in good ground. R. Fish.

LYCOPODIUMS.

"There is no plant without its use," is an old proverb, and it is true if applied to the family we are about to write upon, namely, those moss-like plants congregated together under the above name. Mr. Fish indulged us lately with a very pleasant paper upon "What's in a name?" He instanced two, that made the plants bearing them popular at once—the *Flower of the Day* and the *Mountain of Light*, and now we can add two others, the *Silver King* and *Attraction*. These, as our friend Mr. Beaton well knows, are only striped-leaved geraniums, but their names are dispersed, through the pages of The Cottage Gardener, we might almost say round the world, at least wherever lovers of plants live and cultivate "the stars of the earth." Now, if the short-lived plants bearing these pleasant names are rendered attractive thereby, we may claim the same attraction for the *Lycopodiums*. It is true, some of our, perhaps, more-learned-than-wise botanists have attempted to change it to *Selaginella*, but we think the first name has a hold too firm upon the plant-growing public to be changed hastily. We remember the late Mr. Loudon put all his gigantic power forth to change the name of *Dahlia* to *Georgina*, but the first name was so established in the public mind that the attempt proved a failure; the genus remains *Dahlia*, and will do so to the end of time, and so we opine will the name of *Lycopodium*.

We commenced with stating that there is no plant without its use, and we must try to prove the use to which these pretty plants, the *Lycopodiums*, may be put. And here we must confess that their usefulness as an article of food, or as medicinal plants, is very doubtful, but it is as ornamental plants that we claim for them a place in every greenhouse and stove, or even on shady rock work in the open air, for the species belonging to the genus are widely spread on the face of the earth. Some are natives of the heath-clad moors of Britain; others inhabit the Swiss mountains; whilst a third group are found in the shady woods of that far-off country, China; but the greater part are natives of the hot climates of the Brazils, Java, Borneo, and Singapore. From these hot countries collectors have sent them to Europe, either purposely or accidentally, as package for more valuable plants; by these means the species have been multiplied to a considerable extent, and they are cultivated with such success, and are considered so interesting and beautiful, that the Metropolitan Societies give prizes to collections of them, though not obliged to do so by the schedules, in many instances.

As matters of ornament, they may be grown in various ways, but the principal mode is in pots, to be placed in situations where nothing but their relatives, the true ferns, would exist, or at least thrive. Then, again, as plants to be cultivated in fancy baskets, there are none that fill such a situation with better effect; though they do not produce flowers, yet the pleasing green of their foliage and stems, and their pliability, which enables one to peg them down and train them in any direction, render them pleasing objects for the eye, wearied with glaring colours, to rest upon. Then, again, as plants for the Wardian Case, or parlour greenhouse, as it may be termed, there are none that exist longer in it, or are more beautiful. In all these ways we have grown them to our entire satisfaction. All the exotic species love to grow best in the shade, and, therefore, if in pots, they may be placed underneath other tall-growing flowering plants, and are very useful there to hide the pots, or the soil, or even the platform and stage.

There are two species, or, rather, perhaps, one species and a variety of it, that lose their principal beauty if placed in the full light. We allude to the *Lycopodium cæsium* and the *Lycopodium cæsium arboreum;* in deep

shade, the foliage of these two plants is of a brilliant greyish blue, with almost a metallic lustre, which gives them a most pleasing appearance; but this lustre soon disappears if the plants are removed into a strong light, or exposed for a few hours to the rays of a bright summer's sun; they then turn a common green, and if continued in this, to them, excessive light, they become quite brown, appearing to be scorched.

The finest colour we ever observed was in the stove propagating house at Pine-Apple Place. In this house they were, whilst young, kept densely shaded, and this shade brought out the splendid colour to the highest perfection, creating the greatest admiration in every visitor; indeed, so attractive were they, that very few went away without purchasing one if they possessed a stove to grow them in. The highest colour was upon the arborescent variety, though the dwarf one, in such a situation, was rich in colour, but not quite so bright. The tree *Lycopod* grows in a stove to an enormous size; we had one lately that was twelve feet high, and thickly clothed with branches and foliage down to the edge of the pot, but it attained such a size that we were obliged, for want of room, to cast it away.

Some growers of orchids plant dwarf, trailing *Lycopods* upon the baskets containing *Stanhopeas*, and other basket-loving epiphytes, and say that they are useful as indicators when the orchids require water—in that respect acting as hygrometers. There is another use to which these flowerless, but beautifully green, plants may be applied; they not only act as indicators, but as shade-giving plants, sheltering, by their green foliage, the young and tender roots from the light.

T. Appleby.

(*To be continued.*)

CULTURE OF THE ROSE FOR EXHIBITION.

(*Continued from page* 259.)

Raising New Varieties from Seed.—In our last paper on this interesting subject it was mentioned, that the cultivators of the rose are chiefly obliged to the French for raising new varieties, and also that they might be raised from seed equally as well in this country, by saving seed from the best formed flowers, with fine foliage, free habit of growth, and abundant bloom, and a few hints were given on hybridizing, so as to improve the breed and produce better varieties. Now, as many of the best hybrid perpetuals will still be in bloom, it is a good time for the delightful employment to be forthwith proceeded in. Remember what was said about expecting seed only from flowers not perfectly double, and look diligently for the parts in the flowers operated upon for pollen and stigmas. In order to understand what we mean, examine a single rose; in it you will find a number of small threads, and a kind of knob on the top of each thread or stamen. These knobs, or anthers, when fully mature, open or burst, and a fine powder may be perceived inside; this is the *pollen*, or fertilizing dust: without these appendages, and the dust or pollen, there will be no seed or fruit. Then look again, and you will see in the centre of the flower, in the midst of the stamens, another thread, bearing a different shaped head or knob; this is covered with a glutinous matter, and upon this the pollen dust falls and fertilizes the seed, giving it life. This organ is equally as needful to produce a living and growing seed as the pollen dust. All flowers, then, intended to be hybridized, should have the central filament, with the stigma on it, perfect: the pollen might be supplied from other plants. To effectuate a new variety with greater certainty, the anthers on the flowers intended for improvement should be removed entirely, and pollen brought and scattered upon the stigma from some other flower, that has some desirable property the one to produce the seed may be deficient in. We will give an instance; that fine, high-coloured rose, the *Géant des Battailes*, is not a perfectly-formed flower, it is deficient in the centre. Now it is very desirable to keep the beautiful rich colour, therefore it is not wisdom to use pollen from a paler rose, such for instance as *Coup d'Hebe*, though this is, perhaps, the most double and fullest of well-formed petals of any rose we know; no, we must look for it on some rich, dark, well-formed, and full-petalled variety; *Paul Perras*, or *Ohl*, would answer, and both are full, well-formed roses; or one we noted at Chiswick would answer the purpose, it was named *Vandieul*. This example will at once be understood by any rose-grower, and be acted upon; for it is a self-evident fact, that to achieve an improvement in one quality, we may, if we use improper means, defeat the proposed end. Let those of our readers, then, that may try to improve the varieties of the rose, take care not to make use of such as are widely different in colour. It is true, striped roses might be obtained, but we consider variegation as not a desirable property. *Selfs*, that is, roses of one full, clear, and distinct colour, are much more beautiful, always most admired, and, in consequence, the most highly valued; let, therefore, a dark rose be fertilized by the pollen from another one of nearly the same colour. A white rose will, of course, be done so, and so should a blush, or, what is called emphatically, a rose-colour, and, above all, the yellow varieties. In this last colour there is particularly a wide scope for improvement. The best yellow is the *Persian briar*, but it is only a little more than a semi-double rose. It is very likely, on that account, to produce *seed*, but we know of no rose of the same colour, or approaching it, that would be likely to improve it. *Viscomtess des Cazes* comes the nearest in colour, but it is a different species entirely. Then the *Old Yellow* rose, so difficult to flower, is also another distinct species, as is also the *Cloth of Gold*. Yet, as a good full yellow rose is a great desideratum, it is desirable to try them all upon this fine truly golden-yellow one, the Persian. The *Bourbons* have hybridised with the *Chinese* varieties; and, reasoning by analogy, why should not these yellow varieties, or species? At all events, it is worth the trial. Whether it succeeds or not, save seed from the *Persian Yellow*, even if it is set with its own pollen. By high cultivation, and successive generations, some of our young readers may accomplish that desirable end—the production of a full, double, large, and well-formed *perfectly* yellow rose of the Persian breed.

Our second recommendation is—to save seed from such only as bloom early enough to ripen it thoroughly. This is a self-evident rule, for unless the seed be ripe it will not grow. Now, the rose fruit, or hip, takes full three months from the opening of the flower to ripen it; but it will ripen in the cold days of October, November, or even December, provided no severe frost takes place previously. In proof of this, we need only point to our hedge-rows, where the scarlet hips of the wild rose show their full bright colour during the last months of the year, supplying food to the feathered tribe through the winter season. And here we would remind the aspiring raiser of new roses to beware of the birds, and protect his choice impregnated hips from their depredations. The safest way is to gather them as soon as they are ripe, or if the birds attack them before they are fully ripe, let them be protected with small bags made of muslin netting, such as will not prevent them perfecting the process of ripening. T. Appleby.

(*To be continued.*)

BEGINNING OF THE KITCHEN-GARDEN YEAR.

Although it is improper to say that this month begins another year, as is often remarked in gardening phraseology, because operations bearing on another year, as well as the current season, have been long ago performed—yet it may be admitted, that most of what is now sown or planted is done with the expectation of their coming into use next year; so that, although the weather may give no tokens of it, we are now entering on the autumn of the gardening world; and our floricultural friends will fully bear us out in that view, since they are accustomed to call all plants propagated after July, "Autumn struck." But, as we have an accumulation of work to perform this week, we must leave our brethren of the parterre and hothouse, and, with spade and rake in hand, see what wants doing in the kitchen-garden way.

As we last week urged on our young friends to bestir themselves, and get a bed or two of some of the best winter *Cabbage* sown, we can only repeat the same charge now, and supposing that to have been done the day our work was published, then, in eight or ten days after, a few more may be sown, taking care, at the same time, that the first lot be properly attended to. Now, this is quite as important an affair as committing the seed to the ground, because it often happens to be so dry, and the ground at times unkind, that unless some degree of attention be paid to the newly-sown beds, the seed might as well have been sown upon a turnpike road. Presuming the ground to have been dry, and exposed to the action of the sun a week or fortnight, it will most likely be a collection of hard-baked clods at top. This will more especially be the case if it be stiff and retentive. However, as the time has arrived for sowing it, compulsory means must be adopted to make it fine; beating it with the back of the spade will break a part, after which a gentle watering, and a little coating of leaf mould, made very fine, will enable the teeth of the rake to find their way through, and separate the lumps left unbroken by the spade, while the intermixture of this leafy mould, or some similar matter, will prevent the soil running into such a hardened mass again; while at the same time it must be confessed, that if used in too great a quantity, and the seed sown on it without any after care, or shade, it is ten to one but the hot, dry weather either scorches up the young seedlings, or prevents the seed vegetating at all. The reason is obvious; the leaf mould does not all at once blend with the soil, the mixture being more mechanical than chemical, the affinity being a work of time, not of the moment. However, as it is equally grateful to the young plant when kept moist, we advise its being used, and after the seed is sown let it be at once well watered and shaded, and we have no doubt of the result, if some after-watering be also attended to, and accidents guarded against. As a very homely way, we usually sow our beds on this plan, and spreading a few pea stakes over them, which at this time become plentiful, either mats are thrown over the stakes, or, what is more common, a little of the best harvested pea haulm, as free as possible from leaves, is scattered over it; this homely plan serves the purpose very well, and under such a covering, *Cabbage*, *Cauliflower*, *Lettuce*, *Endive*, &c., vegetate in hot, dry weather, with a regularity not common even in a favourable atmosphere. Care is taken to remove this shading piecemeal, or in dull weather, while the plants are very young, and unhurt by its drawing influences. The kinds of *Cabbage* to be sown and planted first are some of the small hardy sorts, of which the old early York was the type—a kind having the good property of withstanding the severities of the winter when of a good size, and not running to seed in spring, is the most suitable for the first crop—larger and finer kinds might follow. Of *Lettuce*, the *Hardy Hammersmith*, *Brown Coss*, and *Brown Dutch* are the best, especially the first-named, while the *Batavian Endive* is more hardy than the white or green curled. It is too early to sow *Cauliflower* yet. We usually sow ours about the first of September, but adopt then the same plan of shading, &c., as we now recommend, if the weather be such as to require it.

Celery must now be planted out for a late crop; but for the latest of all, the middle of the month will be in good time. It will be advisable now to look round and plant every spare corner with such kinds of *Brocoli* as will come into use before the time the ground is wanted again for other crops. The *Walcheren* is invaluable that way, and a large breadth of it ought to be planted at once, to follow that planted last month; at the same time, not forgetting to plant some of the hardier kinds pretty freely as well, lest the winter turn out more severe than of late years. The *Danish*, *Sprouting*, and *Dwarf Russian*, are more hardy than those partaking of the Cauliflower breed.

Plant, also, any spare *Greens* to come into use early in spring; if put in rather thickly they are sure to become serviceable when spring sets in, and, occupying little ground, are as profitable as anything else. *Cabbages* planted thickly are invaluable that way; in fact, as all summer crops are now either clearing off or about doing so, consider well what can best be done to make the ground productive in the winter months. *Spinach* will have to be sown by-and-by, and *Cabbages*, &c., planted, but then other crops will be coming up to make way for these.

Break down the necks of *Onions* if they seem to prolong their growing season to an undue period, and when ripe, which is easily known by their dead tops and loose roots, let them be drawn, and after lying awhile to harvest, be carried in, sorted, and put away; the latter jobs, however, may be put off until a wet day.

Potatoes, as they ripen, may also be taken up. It rarely happens that Potatoes in a garden are allowed to remain in the ground after being fit to take up, the demand on the ground for other crops being such as often hastens their removal before they are perfectly ready. However, those intended for seed ought to have every chance to perfect their growth, without which we fear next year's crop will be in jeopardy of falling a victim to that disease, which, we are sorry to hear, is more prevalent this season than the last one.

When *American*, or *Golden Cress*, is required as an adjunct to the salad bowl, it is now time to sow it, and be sure not to forget to thin it in time. *Radishes* might also be sown on some cool, shady border, if sufficiently moist; the Turnip-rooted kinds are most suitable now, but it is too soon yet to sow the principal crop for autumn and early winter use. A few *Onions* may also be sown for drawing young, but the crop to stand the winter ought not to be sown before the middle of the month, and a few *Carrots* a week or so later, only we confess we have little faith in their utility, as they generally run to seed early in spring. Dung, and other materials, must also be collected for *Mushrooms*; and, in fact, everything connected with the ensuing season kept in mind, so that at the fitting moment whatever may be required may be forthcoming. J. Robson.

THE CUTTING DOWN.

By the Editor of "The Cottage Lamp."

We cannot be too often reminded—surely, we cannot be too often reminded, among our pleasures and our toils—that we must all die. Those to whom such a subject is unplea-

sant will not read *my* writing, for I have touched largely upon it; and the only recommendation to notice which my pen can claim is, that it has ever spoken *truth*. To those who feel no gloom or sadness in looking death in the face, I must add another affecting proof that every man shall die, "and his name perish."

I was pondering last night very much upon my paper of to-day; I did not seem possessed of a subject. I was fearful that I should make "a poor hand of it," and disappoint the Editor. How little I thought that a subject was then awaiting me, and one that would cost me sorrow too!

This morning, at breakfast, a kind and anxious young medical man called and requested to see my sister. On returning to the room, she brought the intelligence that John F———, a man who had worked on the property ever since he was a youth, was lying on his death-bed. He was a woodman, skilled in the measurement and management of timber, who has for years been "ranger" of our "woods and forests," in their simplicity; and who knew the face of every tree upon the property. But a very few days ago, I think only this day week, we saw him, in his usual health and spirits, wending his way home, with the customary "niche" upon his back, little thinking—*too* little thinking—of the summons so near at hand. He was labouring for the meat that perishes; but as to the bags which neither moth nor rust corrupt, they were lying empty and utterly neglected. Only two days ago, he was speaking of coming down to the house for orders—the very day on which he was taken ill; but another order awaited him—one which was stern, and must be obeyed at once; from which there was no appeal. Hezekiah was commanded to set his house in order, "for thou shalt die, and not live;" but poor John was not given time to make his paths straight; he was laid at once upon a bed of suffering, and his recovery is said to be hopeless. Unless the Lord gives the word, his departure is immediate.

As we approached the abode of sickness there seemed an unusual stillness there. The cottage is one of three little tenements beneath one roof, and the whole of them are covered with roses, and surrounded by neat and well-cultivated gardens, orchards, and trees. They nestle in a picturesque dell, and are quiet and secluded from the bustle and noise of busy life. Poor John's garden was always fruitful and early; well-stocked, and well-managed. He has a row of bee-hives, under a sheltering box hedge, and there they were this morning, buzzing about as if nothing was the matter. He has had much trouble with them this summer; they swarmed, and went back again; then they hurried out, day after day, keeping him in perpetual uncertainty—but now all is over. How soon do our earthly cares and pleasures cease, and seem as if they had never been.

John has survived his wife three or four years. They never had a family; and an aged brother and sister alone remain to mourn for him. He has lived alone, with a large black cat, the pet of his wife, ever since she was taken from him; but he has kind and attentive neighbours, and his poor old sister sits by him. When we saw him, he was sensible, but could say little. The very great heat oppresses him, and he is to be kept "very quiet." Alas! what a time for the work of works to be begun and finished! What a time for a "sleeper" to arise, and call upon his God! Sabbaths neglected and desecrated—the laws of God broken and disregarded—the Saviour unheeded and unknown—death unprepared for! What a time to face all these terrors, and plead with God, "if so be that God will think upon us, that we perish not." A Christian man must feel deep awe when the last summons comes, particularly if it is quick and peremptory; what shall *he* feel who *has no sure hope* in his God?

John has some worldly business that ought to be attended to. He has other persons accounts in his head, for he cannot write or cipher; but he cannot talk or think of them, though we know it gives him uneasiness. How, then, can he wrestle with Him whose strength "is as it were the strength of an unicorn?" A death-bed is no place in which to repent. Even supposing we are enabled to collect our thoughts, and have time given us to do so, we cannot tell whether it is godly sorrow, or slavish fear, that leads us to cry mightily to God. Many and many a sick penitent has come forth from his chamber, and returned to his wallowing in the mire. Let us not deceive ourselves in this matter; the day will come when we shall look back to these precious hours of health, wasted and misspent, with hopeless agony. We shall then think nothing of our gardens, our bees, our poultry, our pleasantest worldly concerns, except to cry, "All these things I might have done, *and yet* not have left the other *undone*."

Since I wrote the last paragraph, we have again seen poor John. The languid eye lighted, and the horny hand, that has for so many years laboured in our service, was stretched out feebly to meet ours. He could only gasp a few words with difficulty; but some of those few cheered us. To a searching question, he sobbed out—"I have been thinking of these things for a good while. I found I was'nt in the right way. The soul is of a deal more account than the body." He could say scarcely anything more; but the eyes moistened, and the weary head moved, as if he felt the power and sweetness of "the Word," as it met his ear. There is no other *word* that can give comfort in the dark valley—no other pillow to rest the soul—no other "water" that can calm the fevered mind. The parched lips may be refreshed with the cool draught, but they will "thirst again." "But if any man drink of the water" that Jesus Christ will give him, "he shall never thirst again," but be satisfied with the sweetness of *that* draught for ever and ever!

Before these lines go to press the earth will have rattled upon the coffin of poor John—another cottage gardener. May it sound in the ears of many who dwell far from his secluded grave! May it call to them loudly to "remember their Creator in the days of their youth," their health, their prosperity! *We must all die:* it is a solemn thought. *But we may not all be ready:* this is more solemn—more terrible still. Oh! let us set our houses in order *now*. Let us make up our accounts with God *now*. Let us be as servants, *ready* and *waiting* for our Lord. We shall enjoy our gardens, and bees, and home pleasures, ten thousand times more than we have ever yet done, when our great spiritual account has been crossed out by Jesus Christ—when there is "no handwriting against us"—when he has whispered clearly to our heart, "Thy sins be forgiven thee; go in peace."

"Man cometh forth as a flower, and is cut down." Let us *all* remember the *cutting down* of poor John F———, the woodman and cottage gardener!

ESTIMATE OF POULTRY VARIETIES.

A poultry-fancier myself, I look out (always with interest) for the remarks in The Cottage Gardener, made by your various correspondents—"Anster Bonn," "Q in a Corner," "A Subscriber," &c., &c.

In the multitude of counsellors there is wisdom, and therefore, though my experience does not lead me to the same results with them, as to the relative merits of poultry, I am induced, as a large poultry-breeder, and a not unsuccessful exhibitor, to send you *my* opinions, in case you like to publish them in your excellent periodical.

I am lucky enough to possess a good many *walks*, so that I have been able to keep apart, at one time, Cochin-Chinas, White-faced Spanish, Minorcas, Grey and Spangled Dorkings, Bolton Greys, or Every-day Layers, and Polish. Of all these I have endeavoured to secure the best blood.

I find *Cochins* very good layers, but their eggs are very small; and though mine *have* laid more eggs in the year than my Spanish, it has not been in the proportion I expected, considering the size of the eggs, and the great quantity of food consumed by the Cochin-Chinas. My man's remark to me yesterday was—"Why, sir, two of those fowls eat as much as a pig;" and, allowing for a little exaggeration, he is not far wrong. They are good nurses, well suited, from their tameness, to be kept in confined places; but, from their great voracity, I do not consider them "*paying poultry*" to a cottager. As a bird for the table, their great heavy legs are sadly against them, and *I* should call their flesh "coarse and stringy." I have got a few chickens crossed between Cochin-China and Dorking, which promise to be very good table fowls.

Of *Spanish*, I have got nearly the best in England (I believe), and, as *layers*, I cannot speak too highly of them. I think I am safe in saying that since February last my

hens have given me six eggs each weekly. My eggs have varied in weight from three to four ounces each, and (I cannot agree with "Subscriber") not inferior in flavour to Polish, or any other poultry. They are bad, uncertain nurses; and, though their flesh is very good indeed, they are not favourites in the kitchen, from their *dark* legs. The cooks call them "crows." Though the white-faced Spanish are considered more valuable than the *Minorca*, and command the prizes at an exhibition, I am inclined to think the Minorcas lay as large eggs as the white-faced, though, as is usual (with ladies especially), looks go for something, and the latter are very much handsomer.

Of *Dorkings* one cannot speak too highly: they are fair layers, good nurses, and capital as table fowls, but I do not think their eggs are as highly flavoured as Spanish, Game, or Polish, and I could wish them a *little* larger. I had a cross-bred Dorking and Spanish hen once, who was first-rate.

Bolton Greys are certainly good layers, but they disappointed me; their eggs are small; and from their love of rambling, especially in the neighbourhood of plantations, however highly fed, one loses many eggs. They are bad nurses. Though small, they are very good to eat.

Of *Polish* I need say little, after "Subscriber's" remarks, with which I generally, though not entirely, agree. I admire them as much as he does. I think them excellent layers, though not better than the Spanish, and much smaller eggs; but in the north, where I reside, I have found them (and I may add white Dorkings) rather delicate. This may be local, however. We are on cold clay; but I have had no difficulty in rearing Spanish chickens, of which I have now 136, having only lost five this year.

The conclusion to which I have come is, that the two breeds most desirable for the cottager or farmer to keep, whose object is "good returns," or for the amateur who wants good supplies, are Spanish and Dorking. I have given a fair trial to Cochin-Chinas, having got the best birds I could buy; I own I am disappointed with them; and I strongly suspect (however much I may incur the indignation of "Anster Bonn" and your other correspondents, by such an idea) that the time is not far distant when others will come to this opinion, and that we shall find that the mania for Cochin-China fowls is on the decline.—Gallus.

THE BEE SEASON.

I am now looking with interest for reports, from different counties, of the present Bee season. I am sorry to say that here (West Somerset) our bees have had a wretched harvest nearly throughout our best months, May and June, and, until this fine weather set in, the swarms could scarcely keep themselves; they have gained weight since then, notwithstanding it is July. The old stocks that have swarmed are much in the same plight; and those that have not swarmed, which ought to have produced a box or two of honey, have not much more than they will require for winter store. I have not taken a pound of honey this season, but last year by this time (July 13) I had taken above two hundred-weight in glasses and boxes. We had a most excellent season last year in this locality; I took from one stock, last year, a box containing seventy-eight pounds of pure virgin comb, all made in about seven weeks, and left plenty for winter store. This was on the storifying system, which I have adopted, after trying different plans. I now use boxes, which I have been improving for some years, and have now so constructed as to be able to give the bees one or two boxes, or one, two, three, or four glasses at pleasure, with very simple management. I have this season reduced the depth of my boxes, from suggestions I read in The Cottage Gardener, and I think with great advantage.

Your correspondent, "Doncaster," in May 20th number, expressed his fears of the recommendation to remove the old stock and put the new swarm in its place, but I can assure him it is a safe practice; I generally do it, and to advantage, and I only remove the old stock a few yards, where I happen to have a vacancy.—J. W.

COCHIN-CHINA FOWLS: THE LOVEL BREED.

The Lovel breed of Cochin-China fowls (so called from having been imported by Captain Lovel) is said to be one of the purest stocks in the country. They are very much celebrated for compact beauty of shape and delicacy of fluff. They are good in colour, handsome in the head, abundantly booted, and particularly well-formed and full about the breast, but are not famous for great size.

A Lovel cock, which I think myself fortunate in possessing, has this year been mated with some large imported hens, and I have every reason to expect, from the present appearance of the chickens, that this little deficiency in size of the Lovel breed will be corrected in them.—Anster Bonn.

BRITISH SONG BIRDS.

(*Continued from page* 246.)

THE WOODLARK.

Insessores Conirostres. Alaudidæ.

The Woodlark is by no means so abundantly distributed, nor so well known, as the Skylark; for, indeed, in some localities it is scarcely or never seen; nevertheless, its sweetly varied and melodious strains have rendered it desirable by most people. In its habits, it differs from its companion, the Skylark, in singing while perched on the branch of a tree, which the other does not; though generally its song is poured forth high in the air, and often unseen while suspended on the wing. Its song is considered to have less variety and power than the Skylark's, but, on the other hand, it is of superior quality in tone and sweetness; and from its mellifluent, soft, and flute-like notes, is preferred by many persons. In its natural, or wild state, it may be observed taking its flight high in the air, describing circles as it rises, and gradually enlarging those circles as it ascends; and while performing these spiral whirls, uttering forth its plaintive sweet song by the half-hour together; on descending from its "giddy height," it performs the same circular route, singing all the while, its cadences of song decreasing as it lowers itself to the earth, or branch of a tree. In this it differs again widely from the Skylark, whose uprising is in a more direct manner, while its descent to the earth is almost perpendicular, as if it fell by its own gravity, and is altogether silent during that descent. The food of the Woodlark, in its wild state, consists mostly of insects, worms, seeds, and grain. It may be readily kept in confinement if caught wild, placed in a cage whose top is covered with cloth or baize, to prevent the bird injuring itself by its attempts at escape upwards. A few worms, insects, crushed (*not pounded*) hempseed, or wheat, or embden groats, thrown into the bottom of the cage, it will readily, when impelled by hunger, pick up; but it is well to place the cage in some corner where the bird may be left quiet and unobserved, as it is exceedingly shy and wild when first taken; but left to itself, it sooner becomes reconciled to captivity. It should be supplied with water in the cage in a shallow pan, which pan I usually cover with wirework, in order that the bird should not run into it and splash itself, which it would do in its endeavour to escape, and would become dirty from the sand, or other matter, with which the bottom of its cage was strewed, adhering to its wetted plumage; for this, like the Skylark, is a "duster," and not a "washer," and, therefore, would not readily disengage itself from the sticky mass

adhering to it, and would die literally of *dirt*. It may be easily reared from the nest in the same manner as the Skylark, which I need not repeat; but the *grand secret* to keep the Woodlark in health, and, in fact, most granivorous birds, but particularly the Woodlark, is to strew the bottom of the cage with old mortar, powdered roughly, so that the pieces be as large as ordinary shot; these it greedily picks up, and devours in large quantities, and are most essential to its welfare. I have noticed, while their pans have been filled with ordinary food, if there was no mortar in the cage before, the instant the powdered mortar was put into the bottom of the cage, the birds began swallowing several pieces; no doubt these act by way of trituration in their gizzards, and render their food digestible; be this, however, as it may, *they die without it*. A tuft of grass, by way of a small turf, is exceedingly desirable, as these birds, like the Skylark, partake of green food occasionally.—W. Rayner.

NOTES ON VEGETABLES AND NEW VARIETIES.

(*Continued from page* 203.)

Parsley.—This is an excellent herb to grow in the cottager's garden, as it improves so many dishes. The *Extra fine Curled* is certainly the best sort, but I bought a new sort I saw advertised in The Cottage Gardener last season, by Mr. Duncan Hairs, called the *New French Fringed;* it is a very excellent variety, and appears to be much hardier than the common curled species. It seemed to be growing all through the winter, and it must be very valuable to gardeners, who use much of this herb for garnishing, &c.

Peas.—New sorts are coming out every season, almost every seedsman having a new variety to offer, but I am sorry to say, that in nearly all instances they are identical with the sorts which I have grown before. I bought, last season, nearly every one I saw advertised, but found that in many instances they were all one sort, at least, I could perceive no difference in them. I sowed some of each of about a dozen sorts of *Early Peas*, many having new and high-sounding names. Among the dwarfs there was one variety that certainly deserves notice, as it is a different and a good variety—*Bishop's New Longpod;* it is a variety of *Bishop's Dwarf*, but much better. I sowed the *Morning Star*, *Prince Albert*, *Early Warwick*, and *Ward's Early Conqueror*, the last week in January, two rows of each variety, and I found that *Ward's Conqueror* was the earliest of them all, and was fit to gather six days before either of the other sorts, though sown the same day. *Fairbeard's Champion of England* is a very good pea, and is the earliest of the wrinkled marrows. *Burbidge's Eclipse* and *Stubb's Dwarf Marrow* proved both one sort, but it is a good, useful pea for small gardens, and grows only three feet high. *Hair's Dwarf Mammoth* is also a very good dwarf pea, and is an excellent bearer. I bought and grew nearly all the tall branching marrows that I saw advertised last year, and found them to be nearly all one sort, at least I could not perceive the slightest difference in several of them. The following sorts seem one variety:—*British Queen*, *Ward's Incomparable*, *Pond's Incomparable*, *Dorey's Superb Marrow*, *Superb Branching Mammoth*, *Tall Indented*, *Tall White Marrow*, and *Queen Victoria*. *Wailes' King of the Marrows* is a different sort, being green seeded, and is a very good variety, but grows ten feet high. All the above sorts want sticks as high as scarlet runners, but they require to be sown very thin, and are immense bearers. The *Incomparable Marrows* are a very capital sort for the cottager, for if stuck well and high they bear a good crop, keep good till the pods are nearly white, are very large when boiled, and so very sweet that children are very fond of them. I can highly recommend this pea to the cottager. I grew a pea last season, called the *American Dwarf*, from which I gathered a nice dish the 10th of November.

Vegetable Marrow.—I wonder that more cottagers do not grow this excellent vegetable, as it will thrive in almost any odd corner of the garden, provided the soil is good, and it certainly makes a very nice supper for a family, stewed with some small slices of bacon. J. K. T.

POULTRY.

For some years I have kept a quantity of poultry. I find the Chittaprats the best layers, but they are not sitters; this next year I shall have game hens for sitting, and a turkey hen. I believe a turkey makes a better mother of chicks than any bird, and I think I have always found chicks brought up by a turkey forwarder than others, and it must, I think, be from their finding them more insects, and, perhaps, having more warmth. I have not found Guinea fowls such enemies to other poultry as pea-fowls; I have kept all these, but this year I have dismissed the pea-fowls, although I was sorry to lose them, the male bird being a splendid fellow. He destroyed a great many chickens, and, being a very early riser, generally had all our early strawberries, and the young shoots in the garden, many of which he plucked off for mere mischief.

I also keep pheasants; last year one pheasant (a pied one) laid me seventy-two eggs. I was not fortunate in rearing many young ones.

I believe, with good management, there may be a great profit on poultry, but the "Durham Vicar's" case is not a singular one in having a servant who is wasteful of the food; very few servants are as careful of these things as if they were their own.—An Amateur.

FLORISTS' FLOWERS.

Pelargonium (*Otterburn*).—Form of flower good; lower petals pale peach-blossom, contrasting strikingly with the deep blood-coloured upper petals. Petals rather flimsy; but if age in the plant gives them substance, it will prove a very excellent variety.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of The Cottage Gardener. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

Turtle Dove, Gold Pheasant (*An Original Subscriber*).—The wild Turtle Dove can be kept readily, and will breed in confinement. The better plan to insure success is to bring up a pair from the nest. Next year they will pair, and I have no doubt will prove productive. I kept them, and bred for several years. They will also pair with the Collared Turtle. I have raised a progeny from them. The hen Wild Turtle does join in chorus, but her note differs from the male bird by being more feminine. I fed mine upon hemp and canary seed, or off corn or bruised wheat. I do not know, from practical experience, whether the Gold Pheasant will cross with the Bantam. I think it not unlikely, providing both the birds were brought up together from the egg.—William Rayner.

Camellia (*A Subscriber*).—Your Camellia, no doubt, is one called *Henri Fabvre*; at least that variety bears a flower that agrees with your description. *Camellia Hendersonii* is one also of the same colour, excepting the pale edge. Broken sandstone, powdered fine, and sifted, would answer well for many plants, but not for heaths, unless it be pure white sea sand, which, if the particles of salt are clean washed out, would also answer for strong-growing coarse-rooting plants, but not for what are generally called American plants, such, for instance, as Rhodendrons and hardy Azaleas. Your plants are grown, you say, in a greenhouse and when in flower are removed into a conservatory, and plunged in a raised bed of earth; they look well through winter, but in warm weather the leaves turn black. There are two things that will cause this: viz. the want of a free circulation of air, and too much moisture in the internal atmosphere. Your top ventilation is not sufficient in hot weather, and the moisture arising from the bed of earth becomes foul air, which, being confined, injures the leaves, and causes them to decay so quickly that they have not time to fall off before they turn black. Now the way to remedy this, is to increase the top ventilation, and cover the soil with clean sand at once, renewing it whenever fresh plants are put in. Insects will cause the leaves to decay before they are duly ripened in the course of nature. Should you have any upon your plants, destroy them at once; but most likely it is foul air that injures them—correct that, and, no doubt, your plants will continue healthy through the season. Your letter has been inadvertently mislaid, or it would have been answered sooner.

Sion House (*B. A.*).—Your letter has been answered by post. Noblemen and gentlemen must apply to the Duchess of Northumberland, for an order to see the grounds at Sion House, Isleworth. There is no appointed place this season for orders, as there was during the Great Exhibition year, 1851.

Name of Orchid (*W. S. W.*).—The orchid flower you sent came in very good condition. It is a fine variety of *Oncidium Wentworthianum*, probably the variety known as *O. Wenthworthianum Lindleyi*, which has not yet flowered in any collection near London.

Bees.—"Your correspondent, "C. R. R.," writes as follows:—"The old stock swarmed on the 5th of June, and was moved to another part of the garden, and the swarm put into a *very large hive for keeping*, and set upon the stand before occupied by the old stock. As we are all aware, the season, at all events here, was miserable up to the 5th July, so I fed this stock, and never dreamt of giving them additional room. Alas! on the 5th July, they threw off a virgin swarm, which bolted into a neighbour's empty hive, and again a *second* yesterday (17th). From this we managed to get the queen, so of course they went home again." Your correspondent further asks, whether I would keep this hive after having *once* swarmed, should it not come out again? "It is *very heavy*, for the season here, for the last fortnight, has been extraordinary." As the above is the *first* report which has yet come in through The Cottage Gardener of the result of a trial of *the new system*, I have transcribed thus much of your correspondent's letter. In reply to his question, I observe, that the very remarkable season we have had has come to his aid in one respect (*i. e.*, if his stock does *not* swarm again, or is not suffered to swarm), viz:—in providing his "very large" (how large?) *keeping* hive with *a young queen;* at the same time, he has lost a valuable swarm, which, coming at such a favourable moment, in so favourable a season, would have given him a most valuable spoil in a few days time; valuable in proportion to the rapidity with which its comb will have been constructed, and to the purity, as well as quantity, of its store of honey. By all means let him keep the stock which has thrown the virgin swarm. Had the hive-room been sufficiently great (as I have recommended), no doubt there would have been no swarm, but a *very great* store of honey collected. As it is, the hive is "very heavy;" so far so good. I wait for further testimonies in *favour* of the new system, of which, in spite of its past failure, we have a decided one above. I have been chiefly desirous of multiplying my stock this year, on which account I have not had so large a promised surplus of honey as I otherwise should have had; but I have marvelled too at the result of the last fortnight's collection of honey by my bees."—A Country Curate.

Greaves.—*J. A.* writes as follows:—"At page 233, amateurs are recommended to go to a person in St. Paul's Churchyard, London, for this article. To save this trouble and expense, apply to your own pork-butcher: the article is nothing more nor less than the common cuttings from the lard after boiling and the fat pressed out, and sold by them at 1½d. or 2d. per lb.; I buy 8 lb. for one shilling. You can get them fresh every week, and, after cutting them sufficiently small, they may be given as they are both to chickens and to any of your fowls; and also broken in pieces, boiled, and then mixed with sharps or barley-meal; this makes excellent food, and will not at all injure the flavour of the poultry."

Pheasants.—When two months old, in a state of confinement, they will eat earth-worms, meat (cooked or raw), and peas. Indian wheat is excellent for them, as are dwarf kidney beans, raw potatoes, lettuces, cabbages, barley, barley-meal scalded, and wheat. With the above food, and in a small confined place, I have reared them to be as fine as those found in the woods. They are small eaters. No other fowl should be kept with them.—J. A.

Garden at Brighton (*V. P. T.*).—We have heard so much of the "nakedness of the land" about Brighton, that we hesitate to select for you until we hear from some of our readers there or thereabouts. Therefore, will some one there have the kindness to furnish us with a list of the shrubs, herbaceous plants, and potters, which experience has proved to be fitting for the seashore in that locality?

Lily of the Valley (*Anne*).—Just when the leaves turn yellow, in the autumn, is the proper time to transplant Lilies of the Valley; and troublesome things to plant they are, but they will grow in any good garden ground. If you choose roots from an old bed, take those only that have thick ends or buds, and if there are six inches of the old root, or ground runner to each bud, it will be enough. The battle is to get them disentangled. When you have as many as you want, and the ground is trenched ready for them, place the roots flat on the surface, and put three inches of a good, light, rich compost all over them. They live near the surface, like couch grass, and this flat planting suits them better than the usual way of burying one end deeper.

Branching Larkspur (*A. M.*).—The variety is very fine indeed, but not the one required. The seeds from Guildford did not vegetate, or else Charley "has been and done it for them." We have the right sort at last, or, at least, have seen it lately, and seeds were promised.

Cutting Evergreens (*A Subscriber*).—July is the best month to cut evergreens in general, but *Hollies* and *Ilex* may be cut away from May to September. Your *Ilex* (Evergreen Oak) grove is by far too thick, and all the cutting in the world cannot keep it full at the bottom until you let more sun and air to it; or, it may be, that the top branches have been allowed to overshadow the bottom ones. If so, instead of thinning out the plants, take the saw now, and shorten most of these cuttings to a good healthy branch. It is a stern law of Nature that, whatever the size or shape of an evergreen tree or shrub may be, the lowest tier of branches must be the longest. Then it follows that you must not only head down the young wood from the stools of those already cut, but some of the side branches of those now getting bare at the bottom.

Cochin-China Fowls.—W. P. Lethbridge writes thus:—"Are the 'grouse-colour' among Cochin-Chinas, rare or not? From a very large imported hen, and one of Mr. Sturgeon's magnificent cocks, I have this year produced some three or four decided grouse-plumaged pullets, so definitive is the colour, that strangers one and all, exclaim 'how like the grouse.' They are large, strong upon their pins, and blessed with the usual quiet demeanour of the Cochin. (We think they are not rare. We have this kind of plumage among our own Cochin-Chinas.—Ed. C. G.) Other amateur fanciers have, I trust, had as productive a season as I have; few casualties, no sickness, and great and rapid growth. Chicken to be large, must be abundantly and nourishingly fed, upon the same principle that a race-horse, from the day it is foaled, has two milch cows, besides its dam, kept for it; so must you, during the growth, provide extra rations for your Cochin progeny. What a show we shall have at Birmingham! I only hope that dark-coloured birds will not be entirely tabooed as they were last year. My cockerells, hatched the 1st of March, weigh just 8lbs."

Cuthill on the Potato (*R. W.*).—Write to Mr. J. Cuthill, market gardener, Camberwell, Surrey.

Polish Fowls.—*R. M.* may send a stamped envelope, with his or her address, to Mr. John Noble, Boston, near Tadcaster.

Winter-roosting Place (*J. N.*).—Under your greenhouse stage will make an excellent winter-roosting place for your Cochin-China fowls. Kept clean, and prevented from getting into the house, they would in no way injure your plants.

Black Cochin-China Chickens (*D. H.*).—If these are of a pure breed, they are a rarity. Your feeding of them is judicious; but in addition give them, until they are a month or two old, a piece of bread sopped in beer, once daily.

New Zealand Plants (*J. Walker.*).—We shall, ere long, publish an extract from your note. *Harakah* we do not know by that name. Try *Edwardsia microphylla* against a wall facing the south west, and on a dry soil; it bears a yellow flower. *Passiflora tetranda* (Four-stamened Passion Flower) has a small green flower; is tender, and not worth cultivating. We cannot tell which of the *Swainsonias* yours may be; they are evergreen greenhouse shrubs, and handsome. See what Mr. Fish says about *Acacia armata* at page 214 of our present volume. We cannot tell what *Veronica* it is, not being gifted with *clairevoyance;* there are many species in New Zealand, New South Wales, &c.

Bees.—*B. B.* writes to us as follows—(We shall be obliged by an answer to his query)—"My artificial swarm formed in the pan goes on well; the workers have begun to kill the drones; and they are as fierce as any bees in my apiary, scarcely allowing any one to go near them. Can you, or any of your correspondents, inform me where the vessel described by Dr. Bevan, for the manipulation of honey and wax, can be procured? It is not to be had either at Neighbour's or Marriott's. I fear this year will not be good for honey. From the 1st to the 12th of July, all the hives I could weigh, eight out of twelve, were gaining, on the average, three quarters of a pound per day; since that time these eight, consisting of stocks and swarms, have been *decreasing*, on the average, at the rate of half-a-pound per week—none increasing. How is this to be accounted for? One stock I have taken up, as it did not swarm last year, or this, though containing about four pounds of bees, ran only six pounds, three ounces of honey. I hope your bee correspondents will forward, as was suggested last year, the quantity of honey taken from stocks and swarms, and the system adopted by them."

Black Poland Fowls.—In conjunction with other readers of The Cottage Gardener, I was *very much* pleased with "A Subscriber's" "jottings," about his black Poland fowls; such comparing of notes among amateurs is mutually valuable and amusing. With respect to his obliging answer to Anster Bonn's question, however, I must say that that question related only to the golden and silver-spangled Poland fowls, and the difficulty of breeding them *perfectly* regular in the spangling. We have kept the black Poland, and can confirm the "Subscriber's" good character of them as very good layers, but for hardihood, I cannot yield the palm to them from the Cochin-Chinas, for I find the Cochin-China fowls the strongest, hardiest birds of all that I have tried, while I have found the Spanish decidedly more tender than either, and I have reason to think the Hamburgh are the same."—Anster Bonn.

Budding Facilitator.—*H. H——, W. S——*, &c., are informed that we have no information as to where this can be obtained, but we are enquiring. Mr. J. Turner, Parkwood Springs, Neepsend, Sheffield, has a facilitator and budding knife in one handle.

Work on Planting (*E. W——, P.*).—Mr. Cruikshank's work will suit you. It is called *The Practical Planter*, and published by Messrs. Blackwood and Co.

Artichoke (*W. H. Turner*).—There are two varieties—the *Conical* or *French*, which is a milky-green colour, with the scales spreading; and the *Globe*, which has its scales tinged with purple, curved inwards, and compact. The latter is the finest and best.

Peruvian Guano (*T. F. J.*).—This is most beneficially employed for corn, or any other crop, as a very weak liquid manure, frequently applied. There are carts made purposely. The usual mode of applying guano to corn crops is by sowing it over the land at seed time, and harrowing it in. Two hundred weight per acre in this mode are sufficient. The following analyses of guano are by Professor Way.

	Peruvian.	Saldanha Bay.	Western Australia.
Moisture	13,09	22,14	30,14
Animal matter and salts of ammonia	52,61	14,90	14,75
Sand, &c.	1,54	1,62	3,94
Earthy phosphates	24,12	56,30	42,14
Alkaline salts	8,64	5,04	9,03
	100,00	100,00	100,00
Ammonia furnished by 100 parts	17,41	1,60	0,75

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WEEKLY CALENDAR.

M D	W D	AUGUST 12—18, 1852.	Weather near London in 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
12	Th	Michaelmas Daisy flowers.	30.074 — 30.010	83—59	S.	—	43 a. 4	27 a. 7	0 51	26	4 43	225
13	F	Zabrus Gibbus seen.	29.944 — 29.841	82—52	S.W.	02	44	25	1 47	27	4 33	226
14	S	Sea Holly flowers.	29.916 — 29.824	74—55	S.W.	—	46	23	2 53	28	4 22	227
15	Sun	10 Sunday after Trinity.	29.933 — 29.893	79—48	W.	—	48	21	sets.	●	4 10	228
16	M	Birds resume spring notes.	29.999 — 29.931	77—58	S.W.	02	49	19	8 a 13	1	3 59	229
17	Tu	Duchess of Kent born, 1786.	29.893 — 29.882	76—54	S.W.	28	51	17	8 36	2	3 46	230
18	W	Ploughman's Spikenard flowers.	30.240 — 30.056	70—38	N.	—	52	15	8 57	3	3 33	231

Meteorology of the Week.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 75.4° and 52° respectively. The greatest heat, 94°, occurred on the 17th in 1834; and the lowest cold, 41°, on the 13th in 1840. During the period 109 days were fine, and on 66 rain fell.

There is a class of writers who may justly be called the moons of literature. They have no light of their own, but they reflect upon the objects over which they shine rays gathered from other planets, and are always truthful, and always useful. They are men who rarely make discoveries, but they duly estimate those made by others, illustrate them by showing how much the ancients knew upon the same subjects, point out how such discoveries may be rendered most advantageous, and throw over the whole varied lights and ornaments that are always illuminating and agreeable. Of such writers, Dr. Johnson has well said—"It is their task to recommend known truths by their manner of adorning them; to vary the dress and situation of common objects, so as to give them fresh grace and more powerful attractions; to spread such flowers over the regions through which the intellect has already made its progress, as may tempt it to return, and take a second view of things hastily passed over, or negligently regarded."

Such a man was Dr. William Falconer. He never disregarded truth, even where scrupulous casuists think that it may sometimes be neglected, in maintaining the wrong side of a question as a display of skill and invention. "In that respect," he once said to a person who defended the practice, by the authority and example of Dr. Johnson, as good and as great a man as Dr. Falconer, "in *that respect* I consider myself to be a better man than Dr. Johnson, for I never in my life maintained the wrong side of an argument, knowing it to be so."

It was no rare occurrence to hear him confess his own ignorance, and acknowledge his inferiority to other persons; and yet the late Lord Thurlow, at whose table he was almost a constant guest, declared, "that he never saw such a man; that he knew every thing, and knew it better than any one else."

This slight sketch of his character may be closed with the language and sentiments in the dedication to him, of the elegant translator of the French play of *Hector*, "I determined," says this accomplished writer, the Rev. E. Mangin, "to send it into the world under the sanction of an *honoured name*, and had I known a man more venerated for professional talent, polite erudition, strict integrity, and true benevolence, I should not have made use of your's."

He did not live in vain for the cause of learning, or science, or virtue, or religion: his writings contain sufficient evidence of his claim to a place among the philosophers and scholars of his age and country; and his life, it is hoped, will, through the merits of his Redeemer, obtain for him the blessing of "the pure in heart."

He was born at Chester about the year 1741. His paternal grandfather, John Falconer, was a faithful adherent of James the 2nd, and died in exile, but his son returned to England, and became Recorder of Chester. Even in his youth, William Falconer distinguished himself by the comprehensiveness of his knowledge, and the discursiveness of his studies, but when once released from school, he rarely indulged in any that were not in some degree relative to his medical profession. In 1789, he became physician to the Bath Hospital. Passing over his medical works, which are characterised by an endeavour to enlighten the physician's practice by the torch of chemistry, we must pause to consider briefly, his *Essay upon the means of preserving the health of those employed in Agricultural labours.* This was published in 1789, and we notice it more especially, because its warnings apply with equal force to the gardener.

"Neglect of changing their clothes when wet, is a great source of disorder among husbandmen. To remain in wet clothes when the body is at rest, subjects the person who is so imprudent to the united bad effects of cold and moisture. Much worse consequences, however, may be expected, when they who are heated by labour lie down to sleep, as they often do, in their wet clothes. The diminished force of the circulation and other powers of life, which always take place during sleep, cause the bad effects of cold to operate with much greater danger to health and life. This hazard is much further aggravated, if they add to this imprudence by sleeping on the ground. This not only communicates additional moisture and cold, but is, perhaps, still more prejudicial from the nature of the exhalation. It is the opinion of a physician of great eminence, that the vapour which arises from moist earth is the cause of the most dangerous fevers. Those, therefore, who put themselves wantonly in the way of such danger, are guilty of little less than suicide."

The directions for the free admission of air and other sanatory modes of treating the sick, are all admirable, and he concludes by observing—"The support of the spirits of a person labouring under disease is as necessary towards his cure as the administration of medicines. Every person that is ill should be comforted with hopes of recovery and cheerful prospects of life. To foretel a person's death in his presence, who is then ill of an acute complaint, has no small influence in verifying the prediction. Even those whose profession leads to recommend religion to others, should be careful not to dwell too much upon gloomy subjects, and giving people dispiriting ideas of their situation. Repentance and amendment of life are, no doubt, in many instances necessary to be advised, but great care must be taken to administer with advice that greatest of all cordials—*Hope.*"

Previously to the appearance of the volume we have quoted from, he had published, in 1783, *An Historical View of the Taste for Gardening and Laying-out Grounds among the Nations of Antiquity.* This is another testimony of his indefatigable research and extensive knowledge of ancient literature; and similar evidence is given by his *Sketch of the History of Sugar in Early Times,* published during 1796, in the Memoirs of the Manchester Philosophical Society. Among many other quotations, he points out that "the Sweet Cane" was among the offerings made to the Lord by the Israelites (*Isaiah* xliii. 24), and that it was imported from "a far country" (*Jer.* vi. 20); but Dioscorides is the first author who specially speaks of sugar as a kind of honey, having the appearance of salt, and obtained from reeds in India and Arabia Felix.

In 1793, he published *Miscellaneous Tracts and Collections relating to Natural History selected from the principal writers of antiquity on that subject,* and this is also a monument of his extensive learning. The most useful portion of its contents is the alphabetical list of plants mentioned by Grecian writers, which he endeavours to identify, and to assign to them modern names. He died of an apoplectic attack, at his house in the Circus, Bath, on the 30th August, 1824, being in his 81st year.

At this season of Strawberry planting it will be of use to record our estimate of some of eighteen varieties obligingly furnished to us last year, and which have fruited with us this summer. Next year, however, we shall be enabled to give a more trustworthy opinion, for all strawberries, and everywhere, have this year been deficient in flavour, and our plants probably then will be in greater vigour.

Before giving our estimate of the varieties, we will give a sketch of the history of the strawberry, published by us elsewhere some years since.

The strawberry, in its wild state, is found only in temperate latitudes, and in its European state of nature is an insignificant fruit. The wild Scarlet Strawberry of Virginia is superior to the natives of the same genus in "the old country;" but the really wild Alpine of the mountain districts of Italy are not much superior to the wood strawberries of England. Even the Hautbois, in its wild state, is rarely attractive either in size or flavour.

It is not known to have been a fruit with which the Greeks were acquainted; for it is a mere surmise that it is the *Teiphyllon* of Dioscorides; and the evidence is as defective in support of the guess that it is the *Komaron* of Apuleius. There is rather more justification for supposing that Dioscorides included the strawberry with other plants under the name *Pentaphyllon*, because the passage in Pliny (lib. xxv. c. 9), where he mentions the strawberry (*Fraga*), may be so construed. It is a contortion of meaning however.

The strawberry does not appear to have been cultivated by the Romans as a garden fruit, for it is not so much as mentioned by any of their writers on the cultivation of the soil. Cato, Varro, Columella, and the rest of the Geoponic authors, do not even name this fruit; yet it was well known to the people as a wild produce among the grass and flowers about their pasture grounds; for Virgil, when warning the shepherds against the concealed adder, especially directs his monitions to those who are seeking for flowers and strawberries—"*humi nascentia fraga*" (earth-borne strawberries). (*Bucolic.* iii. 92.) Ovid notices both the Alpine and the Wood Strawberry (*Met.* lib. i. and lib. xiii.); and Pliny mentions the strawberry as one of the few native fruits of Italy (lib. xxi. c. 15).

Passing to more modern times, we still find the strawberry unimproved as a garden fruit, and chiefly regarded by botanists. When Lyte translated the "Herball" of Dodoens in 1578, there does not appear to have been any strawberries known except the Wood Strawberry, and, perhaps, the White Alpine. "Strawberries," he says, "grow in shadowy woods and deep trenches, and banks by highway sides. They be also much planted in gardens. The fruit is green at the first, but red when it is ripe. Sometimes also you shall find them very white when they be ripe; in taste and savour very pleasant."

Caspar Bauhin, in his "Pinax," published in 1623, enumerates the Wood Strawberry, the White Wood Strawberry, "the strawberry with fruit as large as a small plum," the Hautboy, or *Haarbeer* of Gesner, and the Alpine.

In Gerard's Herball, published by him in 1597, no notice is taken of any strawberries but the Red and White Wood and the green fruited, the two last "not to be found save only in gardens;" and Johnson, in his edition of the same work, published in 1633, does not mention any others.

Servius calls them *Mora terrestris* (Earth Mulberries).

Parkinson, in his *Theatrum Botanicum*, in 1640, did not add to the knowledge of the strawberry and its varieties which had been published by his predecessors; but in his *Paradisus*, which issued from the press 16 years later, he describes, besides the Wild Strawberry, the Virginian or Scarlet, and the Bohemian, which we do not clearly indentify with any of the varieties we cultivate, unless it be the Hautbois. "The Bohemia strawberry," he says, "hath been with us but of late days, but is the goodliest and greatest."

Quintinnie, in his "French Gardener," translated by Evelyn in 1672, enumerates four kinds of strawberry—the White, the large Red, the Copprons, and the small Red wild. The two last, he says, need not be cultivated, being obtained wild abundantly. But it is curious to find that some of our recent recommendations in the culture of this fruit are merely revivals of M. Quintinnie's practice. Among these, are planting in August, removing the runners as soon as emitted, and renewing some of the beds every year, as none, he observes, should be cultivated for more than four years.

Switzer, in his "Practical Fruit Gardener," published in 1724, only mentions four kinds, the red and white Wood, the Virginian or American, and the large Hautboy or Polonian.

It is quite certain, therefore, that quite late in the last century, any highly improved variety of the garden strawberry was unknown, and we will, therefore, now proceed to detail separately such biographical notices of each kind as we have collected, and thus trace as far back as we can their respective histories.

The *Wood Strawberry*, we have seen, was known to the Romans, and being a native of our own woods, it is the earliest, also, that is mentioned by authors as an inhabitant of our gardens. We have seen that Lyte, in 1578, says it was "much planted in gardens;" and Tusser, in his "Five Hundred Points of Good Husbandry," published five years earlier, represents the yeoman as saying, in September,

> "Wife;—into the garden, and set me a plot
> With strawberry roots, of the best to be got:
> Such growing abroad, among thorns in the wood,
> Well chosen and pricked, prove excellent good."

And Stowe, as is truly quoted by Shakspere, records that the Bishop of Ely's garden, in Holborn, was distinguished for the excellent strawberries it produced, even as far back as the reign of Richard the 3rd (1483).

Thomas Hyll (1593) informs us, that the berries be much eaten at all men's tables in the summer, with wine and sugar, and that they will grow in gardens until the bigness of a mulberry.

The *Alpine Strawberry* was introduced into France in 1764, by M. de Fougeron, who observed it upon Mount Cenis. Three or four years previously it was cultivated

in the neighbourhood of London; and M. Duchesne, writing in 1766, says that the King of England was understood to have received the first seeds from Turin: it was such a rarity that a pinch of the seed sold for a guinea, but its fecundity very speedily reduced this price. It was introduced into England by the Dutch market gardeners, who sold the plants at the rate of five livres per 100. It was from England and Holland that plants of this strawberry were first procured for the French king's garden at Trianon. (*Duchesne's Histoire des Fraisiers*, 57.) The exportation is now reversed, for Alpine strawberry seed is commonly imported into this country from Paris.

The *Cappron*, which we have seen was mentioned by Quintinnie, was the first improved garden variety, and was obtained from the seed of the Wood strawberry. It appears to have been obtained at Montreuil, in France, by a strawberry grower named Pierre Fressant, about the year 1660, and was known in 1766 as the Fressant strawberry. Duchesne thinks it is the *Fragaria hortensis* mentioned by Salmon in his *Botanologia*. (*Histoire des Fraisiers*, 113.) The variety is now unknown, but has probably been an ancestor of some of our present improved varieties.

The *Hautbois* is said by Miller to have been brought hither from America; but in this, we think, he was mistaken. It is not found native on that side of the Atlantic, but it is found wild in Germany; and Parkinson, we have seen, probably calls it the Polonian or Bohemian, and says it was but lately introduced. Its very name seems to be a corruption of its German designation, *Haarbeer*. It is the Capiton of the old French writers. Parkinson says, in 1629, "it hath been with us but of late days. Master Quester, the postmaster, first brought them over into our country, as I understand; but I know no man so industrious in the careful planting and bringing them to perfection in that plentiful manner, as Master Vincent Sion, on the Bank side, near the old Paris garden stairs, who, from seven roots, as he affirmed to me, in one year and a half, planted half an acre of ground with the increase from them, besides those he gave away to his friends."

The *Chili Strawberry*.—The Spaniards conveyed the strawberry with them to South America, and at the foot of the Cordillera mountains, near Quito, our present Chili variety was raised. It was seen there by M. Frezier during his "Voyage in the South Sea," and brought to France by him on his return to Marseilles in 1716. It was called by the South American Spaniards *Frutilla*, or Little Fruit, a singularly inappropriate name if the comparison was with other strawberries, for it was then the largest of the known varieties. The French, gallicizing the name, called it *Le Frutiller*, and it appears to have been first successfully and largely cultivated by them at Brest. From thence it was procured by the plant dealers of Amsterdam, and Miller imported it from Mr. Clifford's garden at Hartecamp, near that city, in 1727. It had bloomed in Miller's garden at Eltham in 1730, but had not borne fruit; and even as late as 1766, Duchesne says, that Miller considered its cultivation abandoned in England on account of its sterility.

The parentage and birth-place of the *Pine Strawberry* is uncertain. It first became known to the English and French gardeners about the middle of the last century. Duchesne seems to consider it a hybrid between the Scarlet and the Chili, but Miller considers it a new species. At first, in 1759, he believed that it was a native of Louisiana, but in later editions of his Dictionary he seems to doubt between that country, Virginia, and Surinam. Duchesne is quite right in thinking the latter tropical locality too hot to have been its birth-place. It reached the Trianon Gardens in 1762, and in company with other plants from Canada and Virginia. (*Histoire des Fraisiers*, 202.)

The *Scarlet*, known also as the Virginian and Canadian strawberry, is most probably a native species of North America, and brought to England before the middle of the 17th century. Bradley, in 1720, and Switzer, in 1724, mention it in their lists of garden strawberries. It was included in Tradescant's Catalogue in 1623, and more fully particularized by Parkinson in 1656. Mortimer, writing in 1707, says it was lately introduced. It is usually considered by botanists as a distinct species, but Duchesne thinks it an offspring of the Wood strawberry.

The present century, subsequently to Knight's experiments on hybridizing, has been the birth-time of many varieties, but few of which, however, have permanent claims upon the favour of the cultivator. These few exceptions are—the *Roseberry*, raised by Robert Davidson, Esq., near Aberdeen, in 1810; *Wilmot's Superb*, of great size, but deficient flavour, produced in 1825; *Grove End Scarlet*, raised by W. Atkinson, Esq., at Grove End, Paddington, in 1820; *Keen's Seedling*, raised by Mr. Michael Keen, a market gardener at Isleworth, about the year 1823; *Elton*, raised by T. Knight, Esq., in 1828; *Downton*, raised in 1816 by the same distinguished horticulturist; and *Myatt's Pine*, *Prince Albert*, *Eliza*, and *British Queen*, all raised by Mr. Myatt, market gardener, at Deptford, within the last few years, and some few others we shall mention presently.

In Scotland, next to England, is the strawberry cultivated more largely and more generally than in any other country of Europe. We have the following particulars on the subject from Mr. J. Smith, gardener to the Earl of Hopetoun.

The cultivation of strawberries in the neighbourhood of large towns in Scotland is found to be a very lucrative employment, and is therefore carried on to a considerable extent. By its means poor and industrious men have risen to comparative opulence, and, in some instances, the farmer has been induced to add it to the ordinary branches of agriculture. It is stated by Dr. Neill, in his treatise on the Gardens and Orchards of Scotland,* and from sufficient data, that the quantity of

* Neill on Scottish Gardens and Orchards, in Sir John Sinclair's General Report on the Agricultural State, &c., of Scotland, vol. ii., page 90.

land under strawberries near Edinburgh does not exceed a hundred acres.* Dr. Neill has given, in the work referred to, a brief account of the strawberry gardens in the vicinity of Edinburgh in the year 1812. At Glasgow, strawberries are estimated to occupy only one-tenth of the market gardens, which places the consumption of that town considerably behind that of Edinburgh, in which, from the market duty paid, the annual supply appears to be from 30,000 to 50,000 Scotch pints.† If, however, we take into account the quantities which are consumed in the gardens—a favourite resort of parties of the citizens in the strawberry season—it is probable that Dr. Neill's statement, in the work already quoted, of from 60,000 to 80,000 Scotch pints on an average, according to the season, may not be exaggerated.

The strawberry gardens in the immediate vicinity of Edinburgh are neither very numerous nor extensive, principally on account of the high rent of land; but also because most of the fields, and particularly the market gardens, have become so saturated with manure as to cause them to be more productive of leaves than of fruit. The greater number are about Dalkeith, Laswade, Roslin, Ratho, and Corstorphine, all of which places are within eight miles of Edinburgh. There are, however, some considerable strawberry gardens beyond this circle, even as far as Haddington, a distance of 18 miles. Excepting the large sorts, they are pulled without the calyx, and are put into small baskets, each containing nominally one Scotch pint. These baskets are packed above one another in square hampers, and are conveyed to the market on a light carriage or framework, hung on springs.

The labour of cultivating strawberries, which is usually light, becomes incessant in the fruit season, on which account the ground employed for this purpose round Edinburgh, by one grower, is seldom more than six Scotch acres, and in general does not exceed three or four. As, however, the cultivation of gooseberries, currants, &c., is commonly combined with that of strawberries, market gardens are usually more extensive. Of these the rent varies from £5 to £15 per acre, those being cheapest which are farthest from the city. The average price of labour per acre, including carriage, &c., is less than £5; and the rate of profit, taking a combined average of seasons, is from £35 to £40 per acre. Occasionally a much greater sum is obtained. In one instance, a gross amount of £120 was made from a single acre, planted in equal proportions with the Old Scarlet and Roseberry varieties. Greater sums than this have been talked of; and it is said that 3400 Scotch pints of the Roseberry kind have been gathered from 1¼ acre. The usual rate of production is much below this, and in dry seasons very far so indeed. (*Hort. Soc. Trans.*, vi. 512.)

It is difficult to estimate the extent of land occupied by strawberries in the vicinity of London; but Mr. Cuthill, a good authority, estimates it at about 100 acres. Mr. Myatt has seven acres at Deptford devoted to strawberries.

We now come to our estimate of sorts, and we shall only mention those of which we can speak confidently. *Hooper's Seedling*, *Keen's Seedling*, and *Black Prince* were all ripe the earliest, and on the same day—June 18th. We prefer the first-named, the berry being handsome and better flavoured than either of the others. *Swainstone Seedling* and *Kittley's Goliah* were each ripe June 27th. Neither of them of superior flavour. Kitley's very large.

Thom's Seedling was ripe June 26th, and is a very superior fruit. Berry a flattened cone, deep red, large, and excellently flavoured.

Myatt's *Deptford Pine* and Pellvellin's *Compte de Paris* were ripe June 30th. The Deptford Pine has a large, conical, deep-coloured berry, but its flavour only of medium quality. The *Compte de Paris* is one of the very best varieties cultivated. Its berry is the handsomest, being globular, bright as if varnished; pale red in colour; medium size; and flavour superior.

Cinquefoil had its first fruit ripe July 7th. This is also a very superior fruit. Berries large, flat, and irregular; dark-coloured, and flavour excellent. It grows very low, and has the peculiarity of many of its leaves being 5-leafleted, instead of 3-leafleted as usual. *Bicton Pine* was ripe at the same time, and is a large fruit, but chiefly desirable as a bright, white, waxy-looking fruit, ornamental in the dessert.

Jackson's Britannia was ripe July 12th. Berry large, flat, and irregular, and deep purplish crimson in colour. Hollow, and flavour not like that of the strawberry, but more like that of the fig.

FORSYTH MSS.

Any information relative to our Australian settlements is more than ordinarily interesting just now that there is a mania for proceeding to their "Gold Diggings." The information we have to place before our readers relates to the very earliest days of their settlement as a colony, even to their difficulties under their first commander—Governor Phillips. He established the colony at Botany Bay in the beginning of the year 1788, and left it at the close of 1792.

"During the remainder of his life he lived at Bath, on a pension of £400 a year. His government was a period of great difficulty indeed, as may be supposed in an infant settlement formed of such materials, and situated at so remote a distance from the parent country; and had it not been for what Dr. Lang calls the energy and decision of character, tempered with the utmost humanity, which Governor Phillips uniformly evinced under the most trying circumstances, it is possible that the colony might have perished, or been abandoned. A wealthy and respectable inhabitant of Sydney, who arrived in the colony during the administration of Governor Phillips, as a free person, mentioned that his ration for a long period was *only a cob, or single head of Indian corn, a day;* and that for three years *he had lived in the colony in the constant belief that he should perish by hunger.* The government of such a colony, under such circumstances, was indeed most difficult, demanding

* The Scotch acre is to the English acre nearly in the proportion of five to four; the former containing 6084 square yards, the latter 4840.

† The Scotch pint contains 103 solid inches, and is nearly equal to three imperial pints.

the rarest qualities of mind. Various interesting traits of Governor Phillips' character are still mentioned by the older inhabitants of the colony. One of these is sufficiently characteristic. On seeing any person with a dog in the course of his walk through the settlement, indignant at the maintenance of one useless mouth in the colony, and yet desirous that the owner of the dog should have a more valuable domestic animal, he would say, 'Kill your *dog*, sir, and I will order you a *pig* from the store.'" (*Gentleman's Magazine.*)

Of the difficulties the first settlers encountered, the following letter among the Forsyth MSS. bears testimony. It is dated Norfolk Island, August 23rd, 1790, but bears no signature. It coincides with Governor Phillips' despatch, dated in the February of the same year, which may be perused in the *Gentleman's Magazine* for 1791, page 271. It will be seen in the following letter that the writer states that they found their gardens good friends in time of need, and we incline to think that even now the spade and the plough will be more enduring friends than the cradle of the gold washer.

"Governor Phillips being alarmed for the subsistence of the colony, on account of no supplies arriving in February last, determined, with the advice of the other officers, to dispatch the Sirius to China, or Batavia, to bring provisions for the inhabitants—supposing (as was really the case) that some accident had happened to the ships sent from England. He accordingly sent the Sirius and Supply brig, with a number of marines and convicts, to this island, with a proportion of the provisions then on hand, very justly supposing the fertility of this island would support them better than keeping them at Port Jackson.

"The weather being unfavourable at the time of their arrival, unfortunately the Sirius was wrecked on this island; by the indulgence of kind Providence no lives were lost, and we had the good fortune to save the greatest part of her provisions and stores.

"My friend, Mr. King, was recalled from the command of the island, in order to go as agent to the Indies, and purchase us provisions; and Major Ross, lieutenant-governor of the colony, came here and took command of the island. As soon as the Supply brig had landed their stores, &c., she returned to Port Jackson, from whence, I learn, she immediately sailed for Batavia to procure ships to bring provisions for the settlement. You may easily suppose we were in a disagreeable situation, not having three months' provisions on hand; and as the ships from England did not arrive at the time expected, we had little hopes of relief till the ships arrived from Batavia, which would at least be seven or eight months. Major Ross immediately called a council of officers, when it was thought proper to go on short allowance of provisions, so as to make it last till the crops of grain would be ripe, or a supply arrived. Every person, therefore, was ordered to be served from the store only four pounds of flour, two pints of rice, and two-and-a-half pounds of pork, per week. This was the 20th of March, 1790. On the 15th of May it was thought proper to reduce the allowance of provisions still lower, when every person received three pounds of flour, one pound of rice, and seventeen ounces of pork, per week, at which ration we continued till the 7th of August, when the ships arrived.

"Our situation was not so distressing as it might appear, having plenty of vegetables in our gardens, and birds in great abundance. In some of my former letters I described to you a species of birds that burrowed in the ground, nearly as large as a teal, with which this island abounds; they are a sea-fowl, and come on shore about the beginning of March to lay their egg (which is but one at a time), and hatch their young; and when they are able to fly they return to the sea again the remaining part of the year. These birds we found in such great abundance, on a mountain in the middle of the island, as is almost incredible.

"I must own, was I to hear a person relate what I now declare as a fact, I should look on it as one of those romances which travellers often indulge themselves in. From the latter end of March till the 7th of August there were (on a moderate computation) not less than three thousand of these birds brought daily into the town, without the least appearance of a decrease in their numbers at the place they were caught, till within three or four days before the arrival of the ships to our relief, when they appeared to decrease very fast, and people were alarmed, fearing this inestimable blessing was going to leave us. But, fortunately, the ships appeared in sight, and dispersed that heavy gloom that seemed to hang on every countenance."

GOSSIP.

We were wrong in stating that *Mr. Punchard* exhibited Cochin-China fowls at the Lewes Show. He did not exhibit for the prize, because the Committee of the Agricultural Society could not allow him to substitute a cock of his own rearing for an imported one which he had entered. When we stated that Mr. Higgs' pen of Cochins carried away the prize from those of Mr. Sturgeon and Mr. Punchard, it was no disparagement of the fowls of these two gentlemen. Our high opinion of their stock has been too often expressed in these pages for us to be so misunderstood.

There is an erroneous opinion prevalent, that *eggs* cannot be sent to a distance without being spoiled in the carriage. To test the truth of this opinion, Mr. Punchard has sent out with each batch of eggs a printed form, with columns to show the results, and requesting the purchaser to fill it up and send it back.

We have before us a copy of all the returns, and from this it appears that Mr. Punchard sent eggs to sixty different persons. The number of eggs sent to them amounted to 878, and from these were produced 537 chickens. This total, however, does not give all the evidence in refutation of the opinion against travelled eggs, for there are numerous instances such as this: "Sent 13 eggs; travelled 350 miles; produced 11 chickens." Another gentleman, who had 9 chickens from 13 eggs, after they had travelled 70 miles, says: "I have reason to speak well of your mode of packing, for this result is better than any I have had this very unfortunate year for hatching. I have set 80 eggs, and have not had a dozen chickens." Mr. Punchard packs the eggs in bran, in stout boxes; the eggs, we believe, with their small ends downwards.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Allendale, Sept. 11th. (*Secs.*, G. Dickinson and G. J. French.)
Bath, Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)
Bridgewater, Sept. 22. (*Secs.*, Mr. J. Leaker and Mr. J. Hayward.)
Brigg, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
Bury St. Edmunds, Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
Caledonian (Inverleith Row), Edinburgh, Sept. 2, Dec. 2.
Cheltenham, Aug. 26.
Clapham, Sept. 11.
Colchester and East Essex, Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.

Durham, Sept. 8.
Forfarshire (Eastern), Sept. 15 (Arbroath).
Glasgow, Sept. 10.
Halifax, August 18. (*Sec.* E. Pholman).
Hampshire, Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hexham, Sept. 15, 16.
Hull, Sept. 16.
Kirkcaldy (Fifeshire), Sept. 9.
Lincoln, Sept. 14.
Liverpool, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), Aug. 24, Sept. 14+, 28, Oct. 12+, Nov. 9+, 23, Dec. 14+.
Maidstone. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), Sept. 10.
Newbury, Sept. 3.
North London, Nov. 23, Chrysanthemum.
Northampton, Sept. 27, Dahlia.
Oxfordshire (Royal), Sept. 23. (*Secs.*, C. Tawney and W. Undershell, Esqrs.)
Peebleshire, Sept. 14th. (*Sec.*, J. Stirling.)
Ponteland (Newcastle-upon-Tyne), Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)
South Devon Botanical and Horticultural, Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), Aug. 19+, Sept. 2+, 8, Oct. 14+, Nov. 11+, Dec. 9+, 16.
Shacklewell, Sept. 1.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, Sept. 17.
Whitehaven, Sept. 17, Dahlias.

POULTRY SHOWS.

Birmingham and Midland Counties, 14th, 15th, 16th, and 17th December.
Bristol Agricultural, December 7th, 8th, and 9th. (*Sec.* James Marmont.)
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).
Cornwall (Penzance), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)
Liverpool, Sept. 23.

THE VINE—GRAPES, &c.

The early fruit is gone, the succession crops and greenhouse vines are now ripening, and the late grapes will soon begin to take their last change; what is to be done?

Assuredly this is an important period to each class, and we must endeavour to delineate the features peculiar to such conditions.

The early fruit is gone; the leaves in a brownish condition, and yet, where vines are healthy, still attempting to produce late shoots. The vine is truly a susceptible, a wonderful tree. Who, that had never before seen or heard of the vine, yet accustomed to our more massive and timber-producing fruit-trees of northern climes, would for a moment suppose that such a half-solidified-looking cane could produce such a weight of luscious fruit, and that too (under favourable circumstances) for a century; or, indeed, much longer? Really the absorbents must be both active and long-enduring.

Thus much for the vine under congenial circumstances; how different the darker side of the question. Who has not seen a vine, ill circumstanced, battling year by year, not to extend, but simply to preserve, a little vitality? Shall, then, a vine which has been early forced be hurried into a state of rest? There is little doubt, that a complete cessation of growth, soon after the fruit is ripe, would produce a somewhat earlier habit in the ensuing spring, and the buds might possibly break with more uniformity. But this benefit would, in many cases, be counterbalanced by a want of energy, if not by positive weakness. The tax on the powers of the vine are so great during the ripening of a full crop, that, be the vine ever so strong, it will be observed to fail; that is to say, growth generally becomes suspended during this process. This is sufficiently convincing, and points, moreover, to the reciprocity requisite to carry on active growth; for in this case it will be seen, that all available growing matter is drawn into, and appropriated by the fruit. The tree thus becomes somewhat emptied of those enriching fluids, the presence of which are requisite in the ensuing spring as food to the unfolding bud, and to carry out a free development up to the point when the new foliage commences elaboration. Such is, we think, borne out both by science and practice. Although what are termed late growths, are, after a certain period, of little use, and in some cases a positive harm, yet there can be little doubt that early vines, exhausted with their recent crop, may be allowed to ramble freely for a month or so after the crop is removed; say, until the early part of August, when rest must be thought of; and this will be soon induced by continuing to pinch every lateral as soon as an effort at new growth is attempted. Thus a considerable amount of elaborated matter will be added to the stock; a sort of surplus fund for the ensuing year, besides an active impulse given to the roots which had become somewhat torpid. If any one will examine, at this period, the roots of vines with ripe fruit, or recently cut, and where manurial top-dressings have been applied, he will find the roots of those possessing growing shoots revelling with the utmost activity in the decaying organic matters, whilst the roots of those overpowered and producing little wood are in a comparatively resting state. Means then may be taken for awhile to keep up a lively action at the root; where borders are dry, a good sousing of liquid manure may at once be given, and rambling shoots trained so as to enjoy the light.

Successional Crops.—By these are meant grapes in course of ripening, and such will, in the main, be the position of the amateur with one house, and what are termed greenhouse vines. In order to do a moderate amount of justice to greenhouse vines, the proprietor should, for a few weeks, weed out most of his in-door stock of plants, and friend Fish will surely bear his testimony to the fact that, like turning horses out to grass and taking their shoes off, it does most of them a deal of good. As for those plants which are in their nature "miffy," or those troubled with vegetable indigestion, why, surely a frame, with its face to the north, will be a good situation for them. Here, with a plenty of cinder ashes beneath them, they will at least endure the vicissitudes which an English summer can give rise to. The removal of many of the plants will give breathing room; will allow, not only fresh air, but occasionally a puff of wind to penetrate the stagnant nooks and corners of the house. Who can for a moment doubt, that crowded and ill-ventilated places are liable to engender miasma, and that such exercise a hurtful influence on the vegetable as well as the animal kingdom? Let this period, then, be selected as a sort of gaol-delivery, and every portion of the house washed down.

The *Oidium Tuckeri*, or vine mildew, has been making fearful ravages of late, and we, amongst the rest, have received our annual visitation of this sad pest. We have had all our walls washed with lime well charged with sulphur; have had fires lighted three or four evenings successively; the flues or pipes being sprinkled with sulphur every evening, and the houses closed. In addition, we have tried the hydro-sulphuret, the invention of M. Grison, and have every reason to think it will prove effectual, though we doubt the *complete efficiency* of one application. Let us advise every reader of this work to use sulphur most pertinaciously, whether

the vines are affected or not, for we have never experienced any damages from its use, when applied judiciously. In sprinkling, or painting, flues or pipes, we hold one maxim as our safeguard—never to apply it to any surface which can by any possibility become so hot as that it could not be comfortably grasped by the hand whilst counting twenty. This, although rule-of-thumb work, has ever proved a safe proceeding. What is termed a small house—say twenty feet long by twelve feet wide—may receive three ounces of sulphur at any time, and four or five to an ordinary-sized house.

To return: after the house is cleansed, let the vines be thoroughly examined, and the surplus laterals removed, in order to do justice to the ripening of the fruit. Let all beware of so reducing them as to suffer the sun to shine immediately on the fruit; no greater mistake can be committed. Such practice is sure to injure both size, colour, and flavour. The finest and blackest grapes we have ever seen have been ripened in deep shade,—strange as it may seem. Let the maxim, then, be to remove just as much of the later spray as shades the earlier foliage, that is, providing it is still in a healthy condition; if not, decaying or injured foliage may be removed, and later growths be permitted to supply its place. We hold it good practice, however, to pinch all growing points when the fruit is changing colour; this causes a temporary cessation of *active* growth, and, by consequence, a higher concentration of the juices in the bearing branches; but as soon as the ripening is complete, the vines, if healthy, will make another effort to refill their partially-exhausted vessels, thus providing for a lively vital action in the ensuing spring. When grapes are really ripe, and not required to hang many weeks on the tree, most of the early laterals near the fruit may be cut clear away. This is the practice of most good grape growers, and is understood to render the buds which must produce the ensuing year's crop more plump and firm.

If any dull weather occurs, fires may occasionally be used; many late crops are seriously injured through low temperatures, accompanied with much moisture of atmosphere. Ample *ventilation*, day and night, is the thing on which we must depend for colour and flavour; depend on it, a coddling system will not produce first-rate grapes. And let our readers remember, that the ripening process should be slow; slow, through abundance of air. We believe that the necessary slowness of the processes in our clime, as compared with tropical climates, is the reason why first-rate grapes in Britain are more luscious than the foreign ones; albeit, perhaps, not so sweet.

It may here be suggested to those who *must* introduce pot plants to their vinery very early in the autumn, that it will be well not to encourage any late growths, but to persist in stopping every growth from the moment the grapes are ripe. It will be necessary, also, to remove every lateral about the end of August, in order by such means to encourage a free circulation of air; as essential to the plants as to the grapes. We will speak of winter, or late grapes, shortly. R. Errington.

STOVE PLANTS IN THE OPEN AIR.

Removing stove plants to the greenhouse when the greenhouse plants are turned out-of-doors for the summer, is a practice almost as old as the use of glass houses for plants. Most of the old authors recommend it, and many writers of the present day subscribe to it, and yet one may travel a long way in the country and not see a greenhouse converted into a stove. The most that is done by the best gardeners in these days is, where a late vinery *is forced* for six weeks after the end of April, to remove the soft-wooded stove plants then in rapid growth, to this vinery, and keep them there as long as the vines do not shade them too much.

The next, and a better step, is *a close cold pit*, almost a new term in our garden writings. More than two-thirds of our best stove plants will do better, or, at least, as well, in a close cold pit, from the end of May to the end of September, than in the stove. This is the plan which is followed in most of the London nurseries, but in some of them a slight bottom-heat, with dung or tan, is provided for the close pits; just as they do who plant out melons for a summer crop in cold frames, or as the cottager does with his cucumber bed in May, give a slight bottom-heat to start with, and after that take the chances of the season. Each of these ways proving in detail the true theory of night temperature.

Mr. Appleby has gone round the Pine-Apple Place nursery with me of an afternoon, opening the lights of whole ranges of long "close cold pits," filled with stove plants, which were watered overhead two hours before, and were now in a damp close heat of, perhaps, 90° a little before sunset, and that without any bottom-heat, only from the afternoon sun, and before the sun got on them next morning the temperature would be down as low as 50°, and sometimes lower, yet nothing could look more thrifty than did the plants.

Now, if you take the best constructed greenhouse in England, and get the best gardener in the country to look after it, he could not grow those stove plants in it half so well as they were grown in the close cold pit; but why the thing cannot be done no one has ever yet explained. The reason why plants grow better in pits where dung-heat is applied, is accounted for by saying that the leaves suck in so much of the bad smell, which is ammonia, but in a pit with only bricks and glass, with wooden framing, there can be no more ammonia than in a greenhouse made of the same materials. Here, then, is a fix, the cause of which we do not understand properly, but the effects are familiar to every gardener of note in the kingdom.

But here step in Mr. Appleby and Mr. Fish, and wish me fixed on safer ground, so I step out into the flower-garden, and walk down between an avenue of *Russelia juncea*, some in pots or vases, and others planted in circles on the grass, like so many standard roses. They are all in bloom, and better than you see them now in the stove, but not better than they were flowered when they were first brought out for competition fifteen or sixteen years ago, and there are one hundred stove plants in this country that would give the same exotic character to a straight walk in a flower-garden, and, what is as much to the purpose, it is either in the small cottage garden, or in the most extensive, that this style seems more appropriate, because the man of rods and yards may say that his space being so confined he must create interest for it by giving it this foreign aspect, and in such large places as Chatsworth and Trentham Hall, you expect to meet with every kind of style, as well as new arrangements and original ideas, exemplified every year. What I wanted to effect by this trespassing on the greenhouse and stove departments is to knock on the head, and altogether crush, the old and foolish notion that a greenhouse is a good place for stove plants in summer, and a better stepping-stone than any other way when you want to turn stove plants out-of-doors into the flower-garden, as I am convinced more and more every year, that many plants, now spoiled by too much *uniform heat* in our stoves, would flourish and do much better out-of-doors from the end of June or middle of July.

Many years back I had been compelled to turn nearly five hundred stove plants out-of-doors at the end of July, owing to some alterations that were to be made in the houses, and before I could get them in again I had to mat over some *Ixoras* to save them from the early

frosts in October, and the old *Calceolaria bicolor*, the *Heliotrope*, and the *Potatoes*, were blackened by the frost before the *Ixoras* suffered under a single mat.

The *Russelia* is only an instance out of many, but I prefer it to illustrate what I so much wish to see in our flower-gardens, because a friend of mine has been in the habit for years to have it in avenues, just as I have said, because it is a plant so easy to increase from cuttings that no one need grudge trying it out for an experiment. The whole of the summer-flowering *Justicias* (we must not include *coccinea*, for it is a late autumn-bloomer) will flower as well out-of-doors as in the conservatory, and better than in the stove, at least will hold on longer. *Gardenias* the same, but they do better in peat beds. Why instance particular plants when the field is almost untrodden? A much-valued correspondent, whom I have never seen, mentions, in a letter received this morning, that he "is doing a little in the out-of-door tropical line, which is an old fancy of his; he has done it on a wide, shallow, trodden-down hotbed about twenty feet long, ten feet wide, on a platform of brick. *Maranta zebrina*, will do; *Hedychiums*, *Sugar Cane*, *Pine Apple*, *Castor Oil plant*, *Hybiscus* of sorts, *Begonias*, *Ipomœas*, *Cucurbitaceæ*, *Richardia* (old *Calla Ethiopica*), *Acacia lophantha*, *Colocasia esculenta* (flourishing), *Maize*, &c." Now here is a grand secret; an old, large hotbed was first made use of; in due time all the air that the state of the sun would allow of was given to the plants in May, and by Midsummer the lights were, very likely, left off at night, and when thus inured gradually to the open air, taking away the hotbed frame, if that was thought necessary, would be no check to their growth. Therefore, theory and practice go hand-in-hand in pointing out the hotbed, or no hotbed pit, to be the proper way of inuring stove plants to stand the open air, and not the greenhouse, where they are at once exposed to too much air and too much dryness, after all we can do, unless, indeed, the greenhouse is kept close and moist, and if it is its character is gone, the name only is changed, the system is the same as in the old stove.

Only think of a cottage gardener having a plot of Pine-apples growing at the end of his Rhubarb bed like so many globe Artichokes! If my garden was big enough, I would have a row of Pine-apple plants next year, if I had to go to Covent Garden market to get them fruited; but Mr. Barnes fruited Pine-apples out-of-doors in Devonshire as freely as Love-apples (Tomatoes), and with far less trouble as to thinning and pruning. But for a man to make the world believe in such simple things now-a-days, he would need to plant an acre or two of the Upas tree, and kill all the rooks and jackdaws in the country with the smell of it, as they used to say of the tree in Java. After all this, I would thank any of our readers who could send us a report of stove plants having flourished in England in the open air during the summer. Who would have thought that the *Russelia* would bloom out-of-doors as well as a Fuchsia. But as it has done so over and over again; why not *Gardenia Stanleyana*, or a score of more interesting plants? All the stove *Siphocampyluses* may do better out-of-doors than any other way; *S. bicolor* can never be flowered in a pot as it does in the open border; and *Salvias* were classed with stove plants in the only catalogue gardeners had access to when I took up the spade; so that, without trials and experiments, *Salvias* might have been forgotten long since, like many more things that would now come in useful to keep up the spirit for variety, usefulness, and brilliancy in the flower-gardens. Some say, that we shall never be driven to make the best of what we have, until all the plants in the world are found out, and brought together. Then, instead of sending out collectors at enormous cost, we shall lay out our strength on other means, such as hybridising, forcing, or starving plants above or below their natural ways, to procure "sports," and trying their capacities for different climates;—and all these points must engage the attention of gardeners some day or another.

When we come to speak of strange experiments, the most learned are as much at sea as the dullest of us, and he of the most extensive practice has the less reason to be dogmatical on any point which he may think he has mastered. There is a cutting just laid down at my elbow enough to make me blush all over, for I have often said the parent was barren, yet I urged on experiments to see if it was really so. The beautiful bedding geranium, with striped flowers, and called *Sidonia*, has been crossed, and the cross has just flowered. There were only two cuttings to spare, and a perfect stranger sent one of them to me, through the post, the very highest compliment he could pay me. The flower I did not see, for this reason, "it was so admired here, and I had at once crossed it with several others." I would sooner lose my right ear than have lost the chance of the first grand-child of *Sidonia;* but here is the description of the seedling:—"I send you this through the editor, not knowing your address.* The *Sidonia* seedling has produced a head of flowers, and is *a beauty;* colour darker and richer than the parent; flowers smaller and rounder, with something of a blotch in the upper petals; truss stiff as wire, upright, and well above the foliage; petals with a tendency to crumple—the only fault; colour exquisite."

D. Beaton.

HARD-WOODED PLANTS.

Tetrathæca verticillata.—This is a plant that must ever please an amateur of refined taste, and with but limited space at his disposal. The generic name is derived from the four cells of its anthers, the specific name from the leaves being produced in whorls, around the very slender and graceful stems. From these whorls the flowers are abundantly produced, supported and suspended by their very slender, thread-like footstalks. The whole genus is very interesting from the little room they take; their neat, compact habit, the freeness with which bloom is produced, and the long time the plants continue to yield their flowers, somewhat bell-shaped at first, but which become more open and broad as the five petals of the flower expand. With the exception of *T. ericæfolia*, *T. hirsuta*, *T. nuda*, &c., which are respectively, rose, pink, and crimson-coloured, the majority are purple-flowered, and that is the case with the species I have selected as the type of the genus. *T. verticillata* blooms almost constantly when from one foot to two-and-a-half feet in height, and whether the plant consists of a few twigs, or is a bush of a foot or eighteen inches in diameter, when of a fair size, I can scarcely conceive anything more graceful and airy. We should meet it oftener in small collections did it stand rougher treatment. A nice plant always testifies not only to skilful, but to *timely* and persevering attention. Its *state* may, therefore, be looked upon as a condition-of-gardening indicator. Let me glance, then, at some of the points to be observed in its culture.

1st. *Its Propagation: Time.*—Spring and summer are the best periods, when the points of shoots, and better still, some short, stubby side-shoots can be obtained, that will cut a little firm at their base, either when slipped off from a larger stem, or cut through at the whorl of leaves.

Preparing Cutting-pots.—This cannot be too carefully done, so as to avoid all risk of rotting and damping. A small pot should be set inside a larger one, and the

* Mr. Beaton's address is Surbiton, near Kingston-on-Thames, Surrey

place for the cuttings prepared with four parts out of five of drainage, and the remaining fifth consist of equal parts of roughish sandy peat, and the other part of pure silver sand, made firmish by pressing and watering. Around the side of the inner pot the cuttings should be inserted, watered, and, when the foliage is dry, covered with a cone-shaped bell-glass. In fact, as much attention must be bestowed as was recommended for a tender Heath.

Position.—The best place is a cold frame, or pit, near the glass, with means of shading at pleasure; as even under double glass the young cuttings will not stand the sun; and if far from the glass, they will perish from exhaustion, becoming too weak and drawn to stand upright. As they show signs of striking, they must be kept more light and airy; but if they are very long in rooting, they may have a little sweet bottom-heat with advantage. When struck, no time should be lost in

2nd. *Potting them in small Pots.*—Keep close again for a few days, and harden off again by degrees. As these plants have very delicate fine roots, the soil in which they are grown becomes an object of importance. Where some very good fibry sweet loam can be obtained, a small portion of it may with propriety be used, especially when the plants are of some age and size, as it tends to render the distance between the whorls of leaves less, and thus makes the plant more sturdy and robust. But in every other case, and especially when the plants are very small and young, it will be advisable to give them little or no loam. The main portion should be about two parts of fibry peat, in pieces not larger than peas and field beans, and one part more of equal portions of silver sand, broken pots, and broken charcoal, with the dust sifted out. The soil will thus be open, porous, and easily drained.

3rd. *Growing.*—As the plant blooms at all seasons, it should be kept moderately warm in winter, say from 45° to 50°; but then it must have an airy open position, or it will become weakly and diseased; and care must be avoided to prevent every thing in the shape of drip in dull and foggy weather. In summer, the plant should scarcely ever be trusted out-of-doors; the roots are easily injured, and a reciprocal action between them and the shoots is soon apparent. An airy position is indispensable; but if near the front-glass in summer, the roots will be benefited if the pot is set in a larger one, and the space between filled with moss. As in the case of other small-rooted New Holland plants, when reflecting on the bright sun the branches are exposed to in summer in their native habitats, we are at times apt to forget, first, that in the soil the roots have free pasturage; and, secondly, that the moss, and other vegetation on the surface, keep the soil cooler than when exposed to a fierce sun in a red pot.

4th. *Watering.*—This should be given with great care. The plants must neither be too wet nor too dry. Anything like stagnant moisture from inefficient drainage, or a dry state, such as succulent plants might bear repeatedly with impunity, will soon render them competitors for the rubbish-heap. I have found clean soft water the best. It should not be poured recklessly against the delicate stems. A potsherd, or an oyster-shell on the surface of the pot, on which to pour the water, will be useful. Let as much be given at once as will reach every fibre; judge when to repeat the dose by the state of the weather, the position the plant occupies, the weight of the pot when lifted, and the ringing or dull sound the pot reverberates when struck sharply with the knuckles. These, and many more, are signs easily acquired by practice, involving handling, it is true; but a fine, gloved gardener, be he practical or amateur, I look upon as I would estimate the value of a *mitted* pussey.

5th. *Insects.*—I do not think the plant in general is subject to any in particular; but partly owing to rough treatment, I have nearly lost a fine plant by the attacks of a very small white scale; and if such a thing should appear on a nice plant, I would not advise other remedies, until I had tried dislodging them with a soft brush and weak soap-water.

Beaufortia purpurea.—This genus is commemorative of a Duchess of Beaufort. The specific name denotes the colour of the flowers, which are produced plentifully in little round balls. Had we another similar in habit, with the colour of the common *Buddlea globosa*, how nicely the yellow of the one and the violet of the other would set off each other's beauties. Many of the *Beaufortias* are beautiful, but of this section of Myrtle-blooms none are more worthy of being placed by the side of the *Tetrathæca* than the species just mentioned. The leaves are small—not larger than those of the most graceful Pimelia—and the plant becomes a bush, and blooms profusely when not more than one foot in height. Though not so continuous a bloomer, the flowers are produced a long time in succession, each young shoot as it grows being furnished with fresh buds. It blooms, also, chiefly in summer and autumn, when the glories of the most of hard-wooded New Holland plants have passed away. If not so graceful as the *Tetrathæca*, but it takes as little room, and is even much easier grown. Similar soil will suit it, with the exception that a little more loam may be safely and advantageously added. It is easier propagated from short young shoots getting firm at their base; and though requiring care in watering, is not so quickly injured from a redundancy or a deficiency. It will stand, when necessary, 5° more cold in winter; but the roots, though not equally vulnerable, should not be greatly heated by the sun in summer.

Phænocoma prolifera.—An old plant, but still very beautiful when well grown. The difficulty is to get a compact specimen; there seems always such a tendency to get upwards at the expense of being bare, or bandy-legged. Fretting and striving after *upwardism* is to be found elsewhere than in plants. What social ills are not to be found in its train? Those who wish to grow this kind of the everlastings (for the genus *Aphelexis*, and *Helichrysum*, are neither of them far removed from it), must commence aright with a dwarf, compact plant, a few inches in height, from the nurseries. The uninitiated would prefer, for the same money, a plant with one or two brownish stems, and from a foot to eighteen inches in height. It is a hopeless case. True, the plant will bloom at its points year after year, but no twisting, or managing, will make it a nice, pretty, regular specimen. If such a young, bushy, dwarf plant cannot be obtained, and without vigorous stopping and training the youngest will soon become lanky, the best plan would be to commence with a few cuttings, which are easily procurable from the numbers of stiff side-shoots that are always found clustering round the stem. They require much less care than the *Tetrathæca*. If placed in sand, with a bell-glass over them, they may even be set on a shelf close to the glass, and will merely require shading when the sun is very intense. I have had them strike freely without shading at all. When potted off, the stopping and training of them out should be the chief thing. Two parts turfy pit, one of fibry loam, and one of sand, broken pots, and nodules of charcoal, will grow it admirably. The roots are not particularly sensitive, as respects heat or cold, but will stand considerable extremes; 45° in winter, and 70° in summer, will be a good medium temperature.

R. Fish.

CONIFERÆ.

Araucaria.—This fine assemblage of plants, so remarkably different from any European trees, is so

named from the *Araucanos*, a nation inhabiting that part of Chili, where *Araucaria imbricata* grows wild.

A. Bidwillii (Mr. Bidwill's Araucaria).—Native of New Caledonia, an island in the Great Pacific ocean, and Moreton Bay, in Australia. This is a beautiful tree, rivalling in symmetry of growth its better-known congener, the *A. imbricata*. Messrs. Henderson, of Pine-Apple-place, imported a large case of this fine plant lately. One of them measures nearly four feet high, and is growing rapidly in a pot in the open air. We much fear it will prove too tender to bear the rigours of our moist winters. In its native country it is said to reach the height of 150 feet. As a conservatory plant it is very handsome.

A. Braziliana (Brazil Araucaria or Pine).—Average height, 70 to 100 feet. The wood of this Pine is heavy, and close grained, and is very useful to the Brazilians for making various articles of furniture. In this country it will only live in the most favoured parts of the island. No doubt in the South of Europe it would thrive and form an useful and ornamental tree. There are two or three specimens at Dropmore that have attained the height of thirty feet, but they do not look happy, and require protection in severe winters. *A. Ridolfiana* is a variety that when young very much resembles the species, but is said to put on a different appearance when old. There is also another variety named *A. elegans*, with the foliage very densely set upon the branches. It has a graceful, drooping habit, but very little is known of these two varieties. We possess a good plant of the latter, about two feet high, well branched, and with an elegant drooping habit. Whether these varieties will prove more hardy than the species remains to be proved.

A. Cunninghamia (Mr. Cunningham's A., or the Moreton Bay Pine).—This is a very handsome tree in its native locality, frequently rising to 100 feet high. It bears a considerable resemblance to the *A. excelsa*, but the foliage is more prickly, and of a darker hue. The timber is said to be excellent. Near the south coasts of England it grows and thrives well, but in the more inland parts it requires protection through winter. In the lofty conservatory it forms a handsome ornamental tree.

A. excelsa (The Lofty Araucaria or Norfolk Island Pine).—Native of Norfolk Island, and New Caledonia. It reaches in its native islands to 120 feet high. It is of an upright habit, the branches surrounding the stem at regular intervals, in a systematic manner. Whilst young they are horizontal, but as they advance in growth become drooping at the extremities. Being so very ornamental, it is much to be regretted that it is too tender to bear the open air in this country, even in the warmest parts of the island. In Italy, or the South of France, perhaps, it might live and thrive. Here we can only make use of it as a cool conservatory plant, for which it is admirably adapted. In such a building as the Crystal Palace, at Sydenham, it would have room to expand and show forth its almost regal dignity. And this is one amongst the many objects for which such a building is the proper arena.

A. imbricata (The Imbricated-leaved Araucaria or Chili Pine).—Average height, 120 feet. We have already written much in praise of this truly valuable tree—valuable both for stateliness of growth, and for its utility. It is decidedly the most remarkable of all Conifers, and its well-proved power to bear our most severe winters is one of its qualities that strongly recommend it to the British planter. Seeds are imported in large quantities, and they readily grow with very moderate care. Hence it will soon become cheap enough to plant it as a matter of profitable outlay, especially when its useful qualities are more fully understood. The wood is strong and good, and it is full of beautiful streaks of rich colours, and is capable and worthy of being worked upon by the cabinet-maker. The seed, too, is useful as an article of food. The natives roast it as we do chestnuts, to which its taste bears a strong resemblance. Every way, it is a most desirable tree. So far, however, we have only made use of it as an object of ornament, and there is no tree or shrub that commands more admiration. Whether the seeds will ripen in our climate we have not yet ascertained; but we have seen several cones on the one in the Royal Gardens at Kew, and we hope, when the trees attain the proper age and size, that desirable object—the ripening of the seed—will be attained. The grand use, at present, to which this fine tree may be applied, is to form avenues to the various mansions of the nobility and gentry of this country. This has been done already, as we mentioned previously, at Elvaston, and at Chatsworth, and when these have attained a certain size and character, no doubt they will excite others to employ them for the same purpose. Also, as single trees on the lawn, or in the park, they form fine objects; but in such situations they should be planted young, and guarded from injury by cattle or game for several years, and should not be shaded by other trees. T. Appleby.

(*To be continued.*)

ROSE CULTURE.

(*Continued from page 244.*)

Raising new Varieties from Seed.—Due attention having been paid to hybridising, protecting those flowers that have been operated upon from bees and birds, and the season having duly ripened them, our next head is—To gather the seed as soon as it is ripe, cleanse it from the pulp, and keep it perfectly dry, but cool, till the sowing season arrives. This rule scarcely needs any further explanation; but in order to render our instructions practical and complete, we shall dilate upon it a little.

The seeds are generally ripe enough when the hips become red, or rather scarlet, though many kinds never attain the highest colour, but rather a kind of brownish yellow—indeed, the colours almost vary as much as the fruit of the apple The ripening, then, must be judged of by the outside beginning to shrivel; soften it never will, like the peach or the plum; but it will soften to a certain degree, so much so as even to be moveable if squeezed hard. Whenever it is adjudged to be ripe, gather it immediately, and put the hips into a vessel filled with milk-warm water. Take hold of each hip, and crush it into pieces, separating as much as possible the hard lump of seeds. When all are crushed, agitate the water considerably, and pour off gently all the skins and pulp. You will find each seed imbedded in a kind of hair; this must be got rid of by frequent rubbings, adding fresh water to carry it off. Continue these washings till the seeds are quite freed of the skins, pulp, and hair; then pour them into a fine sieve or cullender, the mesh or holes of which are too fine to allow the seeds to pass through, but will allow any remaining pulp to wash away. Then set the sieve in the open air for a few hours till the seeds are perfectly dry, give them a rubbing between the hands, and wrap them up in paper, or put them in a fine canvass bag. If in paper, put them away in a drawer, in a cool room, till spring; but if in a canvass bag, which we think is the best, hang them up in a room where there is no fire, but well dried by a draught of air every day. In this place keep them till the end of February, examining them occasionally to see that no mould nor vermin has attacked them.

When that time arrives, fill some wide pans with a mixture of loam and leaf-mould—two parts of the

former to one of the latter—draining them well previously. Press the soil down gently and evenly, and upon it sow this carefully-prepared seed, rather thinly. Set these pans either upon a platform in the greenhouse, near to the glass, or upon a very gentle hotbed covered with glass. Give air on all favourable occasions, and be particularly careful, when the plants begin to appear, that they are not subject to a damp atmosphere, for if they are, they are almost sure to fog off. This serious evil may be prevented by covering the bed with dry coal ashes, which will absorb the damp partly, and by giving abundance of air to carry off the remainder. The great aim should be to keep them healthy, and growing them as slowly as possible, to induce a dwarf stockiness to the plants. As soon as they have become two inches high, and the weather is sufficiently warm and mild, set the pans out-of-doors for a week or two, shading them from violent sunshine till they have become inured to the full light, as well as the full air. They are then ready to be operated upon, according to Rule 5, which says, "As soon as the seedlings are grown a few inches high, and the weather will permit, plant them out in a nursery bed, in a carefully-prepared soil—neither too light nor too heavy."

Prepare the Ground, by first (if it is not naturally dry) perfectly draining it, if that can be easily done; but if not, by raising the surface of the bed above the surrounding level five or six inches. The sides of the bed may be formed with either slate, or brick, to hold up the soil close to the edge of the bed. The soil should be strong loam well enriched with very rotten dung; press or tread it down pretty firmly, and then bring out the seedling roses, one pan at a time. Commence raising the plants at one side with a small trowel, then make a mark across the prepared bed, and put in the plants in a line with the mark, planting them at six inches apart. When the first row is planted, make a second mark or line across the bed one foot from it; plant it the same as the other, and so proceed till they are all planted; then give them a gentle watering, and shade them for a few days with sticks and mats thrown over them till they make fresh growth. They then want no more attention that summer, except keeping them constantly weeded, and the surface stirred occasionally, to prevent moss growing, and baking and cracking with the drought of summer. As they advance in growth and begin to assume a character, look them over, and any that by foliage, or any other mark, denote a difference and show an improvement, let buds be taken from such about August, and insert them either into the common stock in the usual way, or three, four, or more, may be put into some rose bush, of any kind, with characteristic marks similar to the seedling; that is, if the seedling is of a stout habit, like the Gallic tribe, put the buds into one of similar habit and class; but if weak-growing, like the China, or Tea-scented class, bud it into one of them. The reason for this precaution is obvious; the strong growers should be worked upon strong growers, or they would overpower the stock and eventually perish; and the weak growers upon strong stocks would never be able to take up the abundant flow of sap from such a strong stock and such a necessarily large stock of roots. Proportion, then, the apparent habit of the seedling to the habit of the stock, and they will work together harmoniously. And this agreement in strength of stock and scion is necessary to be observed in budding or grafting any roses, whether seedlings or not, though the advantage, in a slight degree of strength, may be allowed to the stock in preference to the scion. The seedlings, after the buds are taken from them, must not be destroyed till they have blossomed, as sometimes the most unlikely in foliage, habit, or strength, produce good roses; the budding of any being only done to accelerate blooming of the buds so removed. If they bloom sooner, they are soon proved, and if found worthy, may be then rapidly multiplied; or if worthless, are the sooner dispensed with. T. Appleby.

(*To be continued.*)

OCCUPATION OF VACANT GROUND.

The season has now arrived when several of the summer crops, as *Peas*, *Cauliflowers*, *Early Turnips*, and sundry other things will have reached, and gone past, that state of perfection which fits them for table, and may be at once removed. In fact, we advocate their being cleared away as soon as ever they are superseded by other crops, or are no longer fit for use. This being accomplished, either in whole, or piecemeal, then comes the question, what is to be done with the ground they have been occupying? Usually, circumstances determine that question in a manner against which there is no appeal, but often some discretionary power is vested in the cultivator.

The deep-thinking gardener, whose plans were laid long ago, will tell at once what profitable crop may, with advantage, be now introduced to occupy the vacant ground. With him the change is as familiar as the periodical return of the twilight and dusk after the heat of the day; he had arranged, in his mind's eye, a certain course of rotation which seldom gets marred, unless by accident; and certainly there are such mishaps; but, then, he is as likely as any one to remedy these misfortunes, and turn them to the best account. With him, therefore, we have less to say; our duties lie more with the less-experienced class; and as we have all along advised the space between rows of *Peas* to be planted with *Brocoli*, or some other of the Cabbage-worts, we will suppose that to have been done, and all that is wanted then is to clear away the crop when done with, dig or stir the ground where the row has been, as well as the intermediate spaces; also where the treading, inseparable to the gathering of a crop, may have rendered it hard, close, and unkind, and at the same time filling up any gaps in the crop. Little more can be done until the plants shew symptoms of growing away with vigour, when the application of liquid manure will be of great service; but in the early part of a plant's career, we think it unnecessary, or even hurtful, while, at the time a plant is in a vigorous growing state, it absorbs such grateful food in almost any quantity; we, therefore, say to those who have such crops to manage, to improve the growth of them by surface-stirring the ground, thereby encouraging a healthy action, rather than that gouty, gluttonous one resulting from an over-dose of manure water.

Now for the ground vacated by the *Cauliflower crop:* and may not this be planted with *Brocoli* too, seeing that such a large breadth is wanted? To this we have several objections. The Cabbage-worts do not like to follow each other, although they are by necessity very often made to do so; but when it can be arranged otherwise, another crop ought to follow, or intervene between. *Celery* comes in very well that way, and so does *Winter Spinach*, and similar crops; the most important, however, being *Celery;* but whether this, or any other dissimilar crop from the one removed be decided upon, the ground ought at once to have a good digging without any delay. Much as ground benefits by the rest it receives in the growing season with no crop on it, that benefit is much enhanced by the free access of air to all its parts; therefore, to clear off a crop, and then rake the hardened ground to such a smooth, fine surface as almost to make it appear improper to set foot on it again, is bad gardening. Pretty as it may appear to the eye, it is sealed up against the beneficial influences of the atmosphere, so that it can hardly be expected to

improve by those external circumstances which give fertility to the earth, irrespective of the artificial means used. It is needless to say that a good dunging will be also of service; only, when *Celery* is expected to follow, this dunging had better be reserved for the trenches it is to occupy, when it may be used pretty freely. It is almost too late now to expect a crop on the ridges, yet a few *Lettuce* plants may be put there, provided the weather be favourable for their removal at the time, and the plants good. Of course, the *Celery* ought also to be planted without delay, and everything conducive to its welfare attended to hereafter. We have, on former occasions, detailed our practice in growing this vegetable, so that we have in reality nothing now to add, beyond that the earthing-up of the most forward kinds ought to be done before waiting so long as was recommended by some cultivators years ago, and still followed out yet by others. This system, though not without its advantages, is, we think, open to many objections. A celery trench is seldom anything more than an oblong trough, which soon becomes intersected by the roots of the plants ramifying through it in all directions. Now this can hardly be expected to resist the dry weather we often have at this time, consequently, food in a liquid state ought to be added, and its escape from thence, by evaporation, guarded against by a slight coating with fresh soil, which will answer the purpose of blanching the celery as well: watering with liquid manure need not cease with this first earthing up; on the contrary, it may with advantage be repeated as long as the vigorous growth of the plants indicates its want of such stimulating food, when it may be discontinued, and the plant allowed to consolidate itself, in order to be better able to stand the winter.

Considerable quantities of *Lettuce* and *Endive* will also want planting out now; and as the brocoli, and other crops analogous thereto, will absorb all the space formerly bearing peas and beans, some spot having recently had cauliflowers, or other similar crop, may be planted with this crop forthwith; while ground vacated by *early Potatoes* may have the crop of *Winter Turnips* sown at once, the weather and other circumstances permitting. The kind most suitable at this time are the *Early Stone*, or some kindred hardy sort. Rich ground is not at all necessary for turnips for household purposes, as they are more firm, and stand the winter better, when grown on ground less stimulating. The sowing of these must not be delayed longer than the middle of the month, under any circumstance, otherwise the chances are that a crop of leaves will be the only reward you will have for your trouble.

In fact, we have written enough to make our meaning clear, that all unoccupied ground should be at once put under some crop or other, when ulterior objects do not dictate some part or other of it remaining empty some little time longer. *Onions* to stand the winter will have to be sown soon, and some favoured spot selected for them must be retained accordingly. The principal supply of *Cabbages*, *Winter Lettuce*, &c., are also generally sown about the 12th, and by-and-by plantations of them will have to be made on some well-selected border or other place. Therefore, in planning the various products to their respective positions, due regard must be had to any important ones quickly to follow; otherwise, in a general way, the requirements of a family render it necessary to plant another crop immediately the preceding one gets cleared away; and as the growing season is fast hastening to a close, that duty must not be omitted for the otherwise necessary one of putting a decent appearance on places often visited by company.

J. Robson.

POULTRY OF THE CALAISIS AND THE ARDRESIS.

The Calaisis, the portion of the department of the *Pas* de Calais nearest to the English coast, supplies the London market with an immense quantity of poultry; but it likewise claims a little of our notice on other accounts. The long period during which it remained a valued part of our dominions, shows that, having got something worth having, we were careful to keep it. Elizabeth fretted sorely at the loss of the Calaisis; which, in fact, is a compendium of many good things. It abounds with excellent building materials,—stone, lime, and sand, with turf (a great blessing to the poor), and wood, where the land is not better employed. Close by, there is iron ore, and, as at Hardinghen, coal, though in no great quantity; but they are now making search for it at Guînes, and at Hâmes, which gives the hint that Kent, whose geology is almost the counterpart of this, may possess it also. In the uplands, the soil produces rape, wheat, beans, and barley, in abundance, and many other things to match, hops included. The alluvial soils are most fertile in flax, oats, hemp, &c., besides all sorts of garden vegetables, which, in consequence of the climate, the industry of the people and the good ground they grow in, are cheap and abundant, as well as in great variety.

There is not a little, which, during a walk in the uplands, would strike an English farmer as remarkable, perhaps enviable. In the first place, there are no hedge-rows, nor hedge-row timber. The land is all cultivated, in that respect, on the same principle as at the model example farm at Whitfield, by Mr. Morton. It is contrary to the local laws of many departments to plant a high-growing tree within a certain distance of your neighbour's property. The oaks and ashes which suck the vitals out of so many of *our* farmers short-leased fields are here unknown. The next-door squire who should stick them in along his own boundary, to your detriment, would commit a preventable nuisance. Nevertheless, there is plenty of wood in the country, but it is all collected in woods and forests, many of them of considerable extent, stretching for miles in length and breadth. The road-side elms can hardly be reckoned an exception, as the intervals between them are not choked up by hedge-rows. The result is, a great diminution of the number of weeds and insects. For some weeks, I could not very easily find a bit of groundsel or shepherd's purse, to tempt Madame Dubois's trained siskin to go through his little performances. Permanent home pasture, gardens, orchards, and such like, are alone enclosed by white-thorn hedge-rows; and those are planted, not on the tops of earthen banks, which it is impossible to keep clean, but in the level ground, and in a single row of plants. The white-thorn hedge can thus be *carefully cultivated;* the young and weak stems are supported and trained almost after the fashion of espalier fruit-trees, and the earth at the roots on each side of the hedge forked over, and the weeds got rid of. The hedge, in fact, thus grows in a narrow bed of garden mould. All this, it will be said, is very troublesome; but it is very neat, and very business-like. The rest of the country remains open and unenclosed.

Many people would not at first like the sight of this undivided landscape, bounded only by distant forests, rising downs, or the far horizon of the sea. But to others, who love to breathe a free air, it soon becomes very attractive. There is no occasion to peep over your neighbour's hedge in order to spy out what he is doing; with eyes good enough, you could perceive his very motion at the distance of miles.

Another thing which would astonish the English agriculturist, is the immense number of mole-hills scattered over both the meadows and the arable lands. Moles are encouraged, rather than otherwise. The farmers say they do a great deal of good, and that without them, wire-worms and grubs would be productive of serious injury. The abolition of hedge-rows does not exterminate *all* noxious insects, the cockchafer being one of those that escape; and after having lived four years in the grub state at our expense, every cockchafer costs a great deal more than it is worth. It should have been premised that there are no rooks in the Calaisis, nor, I believe, in its neighbourhood; why, I know

not. Whether it is that they do not like what Cobbet calls "the beastly trimming" to which all tall trees, with scarcely an exception, are subjected, or whatever the cause may be, rookeries are *desiderata*. The *Corvidæ* are represented by hooded crows, during their season, which, however, mostly keep to the sea coast, and feed on marine wafts and strays; by jays unusually impudent and cunning, which seldom travel far beyond the forests; by carrion crows, which prowl all over the country in pairs, laying hold of whatever they can happen with; and most numerously by magpies, tamer, and more constantly in sight than I have ever beheld them. Not even Cornwall can match the Calaisis for magpies. One village, Pihen, derives its name from *piës* and *heim*, according to the annalists; *Pihen* signifies *habitation des pies*, or home of the magpies. But on almost every clump of tall trees, especially in the neighbourhood of dwellings, is to be seen the rough bunch of sticks which indicates the solitary nest of the magpie. Ravens, doubtless, are to be found in the French forests, but one sees or hears very little of them. Of all these *Corvidæ*, the magpie is by far the busiest and the most useful in the destruction of insect vermin; but its numbers are still insufficient to compensate for the absence of rooks. Hence the acknowledgment of the services rendered by the mole. The give-and-take arrangements of nature are never better illustrated in our eyes, than when, from some cause or other, *the balances of power* to which we have been accustomed, are interrupted. D.

(*To be continued.*)

WHICH VARIETY IS MOST PROFITABLE?

Had I seen Mr. Wingfield's paper on poultry before sending you my last letter, you would have been spared the insertion of a second paper on the same subject. As it is, I hope you will find me room for a second "crow," though not one of "*defiance*." A fairer or more straightforward expression of opinion than Mr. Wingfield's is could not be, and if I venture to dissent from his judgment—as to the comparative merits of some sorts of poultry—it is from an idea that when "doctors differ," friendly discussion will ensue, and that so, what I believe is our mutual object—"that of improving poultry"—will be forwarded.

With regard to *Spanish*, their price is *at present* an objection; but after this year that will be very much reduced. I can safely say, I have not found them "difficult to hatch and rear," having actually had more success with them, *in proportion*, than with any other breed of poultry. I have reared from 150 to 200 chickens with very few casualties. From the number of applications for chickens I have had from Cornwall poultry-fanciers, I am inclined to think they are fully alive to the merits of Spanish fowls.

I now come to *Dorkings*, which, I agree with him, "are not remarkable layers;" perhaps I might even go farther than this, and say they are not good; but they are undeniably good as *table fowls*, and good nurses. Except "White Dorkings," I cannot complain, from my experience, of "their great delicacy;" but I quite agree with Mr. Wingfield, "that they require a constant and judicious intermixture of fresh blood."

I should be glad, by-the-by, if any of your correspondents would inform us whether, as regards Dorkings, the same thing has happened to them as to me. Last year I found that of my most carefully bred broods, though the chicks resembled each other in feather, many were without the fifth toe. I concluded this was my fault for breeding in, and that fresh blood was wanting. I obtained fresh blood, putting my old cocks with new hens, and *vice versâ*—in spite of which, this year, out of 120 chickens, I have many of my best without the fifth toe, thus disqualifying them for an exhibition. I have not remarked the difficulty in the Dorking chickens' escape from the egg which Mr. Wingfield describes.

With regard to *Cochin-Chinas*—agreeing as I do in *many* of the points brought forward in their favour by their very able advocate—I still remain of the same opinion, "that they do not make up, by their superior laying qualities, for the quantity they eat, in comparison with other good layers, such as Spanish, or Polish." Mr. Wingfield does "not think them large consumers of food," and speaks highly "of the quality of their flesh." On these points we differ; and, wishing to put this to a fair test, I will relate a conversation which took place a few days ago between me and my gardener (the same man whom I quoted in my last letter).

"Well, Thomas, as you are just married, Mrs. —— wishes to make you a present of some fowls, for supplying you with eggs; but you are to keep, not sell them. Which will you have—Cochin-China or Spanish?" "Well, sir (was the answer), I've a great fancy for the Cochins, they're such very tame things; but they eat too much to make money: Spanish, if you please, sir." I asked my poultry-woman her opinion (and she has had much experience in poultry), and her verdict was the same. One of the gardenmen, who stood by and overheard her, remarked, "Them fowls (*as* fowls) won't pay a poor man; they eats too much, lays too small eggs—though I reckon they're good uns at it; and folks don't like eating them (the fowls); they say they're like parrots." I am sure John never ate a parrot, though his master owns to having done so, and a nasty thing it was; so that the comparison (to say the least of it) was odious.

It is fair to add that I keep my Cochin-Chinas at home, under the charge of these people—the Spanish being at a cottage, under separate care; so that in these expressions there was no *fancy bias*. Filthy lucre was the thing considered; and it was this, and this alone, which formed their judgment.

Thomas again, yesterday, drew my attention to their eating powers, by the expressive remark of—"Eh! see, master! what chaps them be to eat!"

I have never tasted Cochin-Chinas but once; then my opinion was not in their favour, and in this the four or five who were dining with me agreed. We thought the flesh coarse and stringy. The victims were two cockerels, taken indiscriminately from the flock. They were nearly four months old, and weighed five pounds, and just under five pounds, respectively. There was a great laugh at me about "my *guinea* birds," which were to be roasted, and which, when they did appear (with their legs cut off by the scandalised cook, as if they were boiled, to make them shorter), did, I must confess, look very "stilty."

I do not go the same length as my friend Thomas, and declare them "parrots;" but I did not think them comparable with Dorkings. However, my wife declares we must have some more "guinea birds" killed; so all I say is, "Better luck next time."

With Mr. Wingfield's opinion, as regards *Malays*, I quite agree. I tried, and gave them up. I consider Cochin-Chinas superior to them. Beautiful as they are, *Game* fowls will not *pay* the cottager.

I acknowledge the delicacy of the *Polish* fowl, but I should be inclined to place them in the scale, as layers, very far before the *Hamburghs*.

What I had heard of the *geese* at Birmingham had led me to the same conclusion as Mr. Wingfield. I have now eight young geese, from a Toulouse goose and large English gander; and as my attention was drawn to the weight of the gander and two geese who won the prize at Lewes (weighing, at fourteen weeks old, 40 lbs.), I weighed three of my geese, who, at the age of ten weeks and two days, weighed 35¼ lbs.—gander, 12¼ lbs.; geese, 11½ lbs. each. I may add, that these geese were not fed up and prepared for exhibiting. I am convinced that much may yet be done towards improving geese and ducks by judicious crosses.

I must apologise for troubling you with my opinions; and I trust Mr. Wingfield will excuse my differing from him, as I believe our object is the same—that of arriving at "what breed of poultry is likely to prove most profitable to the farmer and the cottager."—Gallus.

TO CORRESPONDENTS.

Budding Roses (*Evesham*).—To argue that because we top a shoot to encourage side-branches we ought to top a newly-budded one to encourage the growth of the bud, is to believe that as soon as a bud is inserted and tied, it is as capable of action as any of the natural buds;—an untenable doctrine in the middle of the nineteenth century. To say that if you "tip" the shoot of a wild rose the sap ceases to flow in it, is quite wrong; it flows enough to support inserted buds.

Beds (*Maurandya*).—The sudden change to hot weather at the beginning of July has caused your plants to grow too fast without showing much flower; and to stimulate them with artificial manures would only

cause them to grow stronger and more barren of flowers. Train and peg down the *verbenas*, but do not stop any of the shoots yet, rather train them over each other till you have a good bloom. The *Œnothera macrocarpa* will train itself; but as the roots are weak, and have been planted this season, you had better fasten down some of the shoots here and there to steady the plants. In another ten days or a fortnight you will see a great change for the better in all the beds.

Melons (*A Constant Reader and Subscriber*).—You have not stated the necessary facts; but it is a fair inference that yours is a house, for you speak of flues, &c. What pity it is that our worthy friends do not, in their queries, give the *data* as well as *desiderata*. The simpler questions are put the better, and as far as possible free from verbiage, but still facts must be stated. The dimensions and character of your house would have enabled us to give a satisfactory answer. A tank confined in a chamber, the latter having sliders on its facings, to allow a graduated escape of heat and air-moisture would be good, and act in conjunction with a source of atmospheric heat; the latter occasionally indispensable. As to sorts, we say, first of all, the *Green-fleshed Egyptian*, such as those exhibited at the June and July shows, at Chiswick, by our friend, Mr. Collinson, of Eaton Hall, misprinted Exeter Hall, in Mr. Errington's article of July 22nd. Next, we would place *Snow's Green-fleshed;* then *Bromham Hall*; then *Terry's;* and, if you can, add some of *Mr. Fleming's Hybrid Persians;* but these want more tender treatment.

Potato-culture.—*B.* says—"On a piece of ground, fourteen feet by seven, I dug fourteen holes, arranged thus—

and having placed a potato set and some manure in each hole, when the stalk required it, I continued to bank the clay round it, until each resembled a small mole-hill. I have this morning lifted them, and found 56lbs. weight of tubers. The potatoes were not planted until February, and they were cut down in the height of the growing season by the disease. Had they been permitted to come to full maturity, I doubt not but that the produce would have been very large."

Pine-apples (*An Attentive Reader*).—Your produce (49½ lbs.) from 18 plants, if they are of the Queen variety, is very good indeed. We are glad that "although you never lived at a place where pines were grown," you have succeeded by attending to the directions given in our pages.

Scarlet Runners (*W. Moore*).—These are perennials; and it has long been known that if the stems be cut down at the beginning of winter, and the roots are thickly covered over with coal-ashes, so as to preserve them from frost and excessive wet, they will throw up fresh stems the following year. However, being so easily and so cheaply raised from seed annually, such treatment is never adopted.

Cochin-China Chickens (*A Constant Subscriber*).—These being ten weeks old, are just of the age when they are usually "with scarcely a feather to cover their nakedness." After this age, if they are kept warm and fed generously, they speedily become covered with feathers. The food you supply them with is very good; but our Cochin-Chinas prefer oats to barley, and it is in some respects better for them.

Pine-growing.—*An Essex Farmer* will have his wishes attended to very soon.

Woodlice (*A. J. V.*).—There is no royal road whereby to make these vermin march off from your melon-pit. We have found gas-lime strewed over the soil, but so as not to touch the plants, check their inroads; and we have trapped them in hundreds, by putting a fresh slice of potato under some moss in a garden-pot laid upon its side; but, we believe, the most effectual and ever-vigilant subduer of them is a toad. One or two of these much-abused animals will clear a frame very shortly of woodlice, and keep it clear.

White Cochin-China Fowls.—*A New Subscriber* may write to Mr. G. C. Peters, Charlton Cottage, Moseley-street, Birmingham.

Heating Cucumber and Melon Pit (*A Subscriber—Attercliffe*).—Write to Mr. Pannell, Leicester, for an estimate for heating it with his hot-water apparatus, and tell him your difficulties.

Pure Cochin-China Fowls (*A Constant Reader*).—These have no "scimetar tail feathers." Some were shown at Lewes which had these naturally, and were disqualified, although their owners had cruelly and unfairly plucked out those objectionable feathers.

Coarse Grass on Lawn (*Simplex*).—No treatment will convert the coarse species of grass into fine-leaved species. You had much better pare off the turf next February, burn it, and spread the ashes over the soil, point them in, and sow Messrs. Sutton's mixture of lawn-grass seeds, as you suggest, and then roll all smooth.

Tropœolum Tuberosum (*Ibid*).—This blooms at the end of August. Our correspondent says:—"I have one which, if I may judge by comparing it with some I have seen here, is a fine one. I have pinched off the tops at about eight feet high, as it has got above my wall, and would go into the next garden. It is grown on a trellis, and is very luxuriant. Had I known its expansive powers, I would have provided a wider one. I think it would have covered a trellis two yards wide with ease. It may interest some of your readers to hear that of this plant I tried two cuttings; for one of them the soil was manured with wood-ashes and other things, for the other with charcoal. Both grew very well; but the charcoaled one, though the smaller and less promising of the two, speedily shot above the other—its leaves are also much larger and darker. From this, I am induced to think that charcoal suits this plant, and the more so, as I put a good lot of charred sticks in the hole when I planted the tuber."

Taking Honey.—A correspondent (*R.*) says:—"Will you call the attention of your readers to the method of taking supers, detailed at page 278 of your 5th volume. Having tried it myself for two seasons, and having found it invariably succeed (for, as I mentioned at page 71 of vol. vii., I consider my only apparent failure a proof of success), I should like to see it more generally tried. Though my continual recurrence to the subject may seem somewhat egotistical, I must plead my desire to extend the knowledge of my accidental discovery as my apology. I this morning (July 31) carried off another glass of honey by the method above referred to. There were four or five bees and about ten drones in the glass. These latter gentlemen do not seem so anxious to rejoin their queen, as in gallantry they ought to be."

Orange Jelly Turnip (*J. Lester*).—Apply to Mr. Chivas, Seedsman, Chester.

Pine-apples at High Temperatures (*An Amateur*).—In very bright seasons, that is, when the light approaches to that of the tropics, then high temperatures may be employed, not only without injury, but beneficially; but in the far greater number of seasons, and in the greater part of the season of a pine's growth, no such amount of light occurs, and then high temperatures are injurious; they promote growth, but the growth is not accompanied by excellence of flavour in the fruit, nor a maturity of growth in the suckers, so that these will not yield such good fruit in their turn as if they were of less forced but more matured growth. We are always ready to reply to questions.

Cochin-China Fowls (*Rev. J. S. L.*).—You may very reasonably expect success in keeping these on your farm near Lutterworth. We know they are so kept much further north. They do not require coddling; indeed, their native place, Shanghai, has severer weather in winter than we usually have in England. The most perfect form of Cochin-Chinas is just as free from legginess as the Dorkings. We shall be glad to aid you into the right road if we can.

Diseased Plums (*T. S.*).—We are of opinion that your ill-success is chiefly the result of the ravages of the plum aphides. You have not stated whether they have been thus attacked or no. We have a tree or two this season, which, in former years, bore the most perfect fruit, producing fruit precisely like yours. Few persons, even gardeners, estimate sufficiently the damage these insect vampires are capable of producing. Only look at the damage they can accomplish on a hop plantation. It will be found, too, that adhesive and bound soils are incentives to their attacks. Such soils, by their incapability of affording a lively root-action of a continuous character, induce a torpidity in the action of the ascending sap, and the consequence is, the accretive matters present become highly concentrated, thickened, and sweet; and thus a source of high nourishment to these depredators, which thrive and multiply under such circumstances beyond all ordinary conception. Such is our opinion, the result of many years close watchings; and we would advise you to replant totally in the end of October, using an entirely different soil: a light sandy loam, planting on the ground level or above it, and introducing half-decayed vegetable matter liberally with the soil. Your Derbyshire clay will bear a heavy admixture with sand; it is your mechanical texture that requires altering.

Alstrœmerias (*Sarah*).—When their stalks ripen and dry, the roots ought to be taken up, dried, and replanted six inches deep, in October, when, with a slight protection in winter, they will live out very well, if the soil is not too wet at the bottom.

Anemone Seedlings (*Ibid*).—The seedlings in the pots had better remain as they are till the leaves die down, then free them from the soil, and go on with them as old roots.

Dielytra spectabilis (*Ibid*).—It will not bloom after this time. When it dies down in the autumn, keep the pot in a dry place over the winter.

Gladiolus Seedlings (*Ibid*).—Give same treatment as Anemone seedlings.

Brompton Stocks (*Ibid*).—Those sown last spring may be planted out now where they are to flower, or any time this autumn, before October.

Clianthus (*Hampshire Housewife*).—Your Clianthus is covered with red spider, and not with the white blight, and if you were to kill all the spiders to-morrow it would not mend your case this season, because the virtue of all the leaves is quite gone for this year, and you may as well strip them all off at once, or you may let them remain till October, and then close prune the plant, and cover the shoots and stem in a paint of sulphur, as Mr. Errington says for the vines. It is not too late to sow the *Campanula carpatica* for next year, if you can keep the seedlings through the winter. Sow one-half now, the rest next March, and let us hear the result.

Adiantum capillus veneris (*Ibid*).—Housewives might call this the Maiden Hair Fern. We have gathered handfuls of it in March and April from under the edges of snow wreaths in Scotland, to kindle fires with to set the heaths "a low," therefore, there is no doubt of its being able to stand out in summer, and in winter too, in any place in England. We trust the beautiful little Maiden Hair Fern will succeed with you in Hampshire. Keep it in the shade, as you propose, and near water, if possible; a damp atmosphere, and never to see the sun, are conditions natural to it.

Rose sport (*A Constant Reader*).—No one knows the real cause of, or a remedy for, roses coming like yours. If the stock is healthy, bud it immediately with some other variety.

Devonian will be specially attended to next week.

Names of Plants (*W. S.*).—No. 1. *Berberis aquifolia* (Holly-leaved Berberry). The berries would form as good a preserve as those of the common Berberry. No. 2. *Cotoneaster microphylla*. No. 3. *Comptonia asplenifolia*. No. 4. *Escallonia rubra*. (*Amateur Geranium Grower*).—Your Pelargonium is *Ajax*. (*M. D. P.*).—Your plant is *Diplacus glutinosus*, formerly called *Mimulus glutinosus*. (*A. M. C.*).—Your tree, at Barming, is the Red-berried elder, *Sambucus racemosa*. (*H. B.*).—No. 1. *Phlomis fruticosa*. No. 2. That curious plant, *Salisburia adiantifolia*. No. 3. The Silver-striped variety of *Euonymus japonicus*.

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WEEKLY CALENDAR.

M D	W D	AUGUST 19—25, 1852.	Weather near London in 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
19	Th	Common Tansey flowers.	30.355 — 30.317	72—45	E.	—	54 a. 4	13 a. 7	9 18	4	3 20	232
20	F	Bull's shrill autumnal noise.	30.294 — 30.153	82—50	S.W.	—	55	11	9 41	5	3 6	233
21	S	Sun's declin., 12° 0′ N.	30.119 — 30.003	79—54	S.W.	—	57	9	10 6	6	2 51	234
22	Sun	11 Sunday after Trinity.	30.012 — 29.936	82—57	S.W.	—	59	7	10 37	7	2 36	235
23	M	Balsam flowers.	29.870 — 29.849	76—59	S.W.	01	v	5	11 15	8	2 21	236
24	Tu	St. Bartholomew.	29.879 — 29.781	72—46	S.W.	18	2	2	morn.	9	2 5	237
25	W	Soapwort flowers.	30.160 — 30.044	71—41	N.W.	—	3	0	0 2	10	1 49	238

Meteorology of the Week.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 71.5° and 50.8° respectively. The greatest heat, 83°, occurred on the 25th in 1826; and the lowest cold, 32°, on the 21st in 1850. During the period 100 days were fine, and on 75 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

(*Continued from page* 285.)

DELPHINIUM. LARKSPUR.

Generic Character.—*Calyx* none. *Petals* five, below seed-vessel, unequal, ranged in a circle, spreading; the upper one extended behind into a long, tubular, straight, bluntish spur; the rest longish egg-shaped, with claws, various in various species. *Nectary* divided, of one or two stalkless leaves, placed in front within the row of petals, on the upper side, extended behind in the form of a tube contained in the spur of the uppermost petal. *Stamens* numerous. *Filaments* awl-shaped, widened at the base, much shorter than the corolla, directed upwards. *Anthers* roundish, small, erect. *Germens*, three, or one, or five, egg-shaped, each terminating in a *style* shorter than the stamens. *Stigmas* simple, bent-back. *Seed-vessels* (*follicles*), as many as the germens, longish egg-shaped, or somewhat cylindrical, of one valve, bursting at the inner side. *Seeds* numerous, angular, rough, at the edges of the seed-vessel.

Delphinium consolida: Field Larkspur; Dolphin Flower.

Description.—It is an annual. *Root* simple and slender. *Stem* upright, from one to two feet high, cylindrical, downy, leafy, dividing into alternate, spreading branches. *Leaves* alternate, the lower on stalks about half-an-inch long, but the upper stalkless, or nearly so; they are divided down to the base into three or five lobes, each lobe deeply cut into narrow segments, and the segments are often forked at their ends. *Stipules* none. *Flowers* few, in loose clusters at the end of the branches; flower-stalks one-flowered, with a few entire, awl-shaped leaves on them. *Petals* usually blue, but varying to purple, pink, and white; irregularly scolloped on the edge; the side petals the broadest, the uppermost spear-head-shaped, not blunter than the others, rather shorter than the nectary, but projecting backwards into a conical tube. *Nectary* within the upper petal. *Stamens* about seventeen, with yellow, roundish, double anthers. *Pistils*, usually two, but often only one, with very short styles, having a white, flat, fleshy summit. *Seed-pod* yellowish-brown, smooth, solitary, with short permanent style. *Seeds* nine or ten, in a double row; black, shining, angular, rough with short hairs and tubercles. *Bractes* at the base, and in the middle of each flower's stalk.

Places where found.—In sandy or chalky corn-fields. Uncommon.

Time of flowering.—June and July.

History.—It is called *Delphinium*, from the Greek for a Dolphin, its flower-buds being thought like that fish in shape, as it was drawn by the ancients. The specific name, *consolida*, is from the Latin word, signifying to reunite, because formerly considered as a powerful remedy for the healing of wounds. The English name of Larkspur is derived from the long spur of the flower, which was compared to the long hind claw of the lark. It was not observed wild by Gerarde, nor by Johnson, the editor of his "Herbal," in 1636, but Parkinson, in 1629, states that it was then "found in some fields of our own country." He says—"We call them in English, Larks-heels, Larks-spurs, Larks-toes or claws, and Monks-hoods." Sir J. Hill, in his Herbal, states that a decoction in water of the leaves is beneficial for the bleeding piles, stopping the bleeding, yet allaying inflammation; that a conserve of the flowers allays diarrhœa in children; and that the juice of the flowers is an excellent application to the eyes when diseased. It was the fresh juice of the leaves that was applied to wounds. The seeds are acrid and poisonous, and the whole plant we look upon as too dangerous to be ignorantly used as a medicine. It is said to be an ingredient of those French cosmetics which, when first employed, improve the complexion, but which soon are so destructive of the skin's surface. The juice of the petals mixed with a little alum is said to make a good blue ink, but we think it cannot be lasting. The best blue ink is made by dissolving Indigo in sulphuric acid, and largely diluting it with water. Sheep and goats eat the herbage of the Larkspur, but horses, cows, and swine reject it. The caterpillar of that lovely, but extremely rare moth, *Chariclea Delphinii* (Peas-blossom Moth), feeds on the wild Larkspur. This moth has been caught at Chelsea, at Windsor, and in Bolstrode Park. (*Smith. Withering. Martyn. Westwood.*)

Having before us a copy of Mr. Trotter's pamphlet *On the Rearing and Management of Poultry*, which has just issued from the press, we lay aside, for this week, our notes upon older poultry literature, just to glance over its contents, and to recommend it to the notice of our readers. It is an enlargement, and more fully illustrated republication, of Mr. Trotter's Essay, to which the Royal Agricultural Society awarded a prize in 1851; and its

author, who resides at Healey Mill, near Hexham, carried off some half-a-score prizes at the Northumberland and Durham Society's Show, last April—prizes for Cochins, Spanish, Dorking, Pencilled Hamburghs, Geese, and Turkies! So the author has a tolerably practical knowledge of what he writes about, which entitles him to the motto on his work—"While I live I'll crow." As a specimen, we extract what Mr. Trotter states relative to the Cochin-China variety, not only because this variety is now attracting most attention, but because it enables us to add a few facts within our own knowledge.

"Beneath the *vent* there is a much greater abundance of 'fluffy' feathers than in other varieties of fowls. The feathers on the thighs also partake greatly of this 'fluffy' nature. The outside of the legs, and the outside toe, ought to be profusely covered with feathers. The wings are so short as almost to deprive the birds of flight; in fact, it is with difficulty they can mount a balk two feet high: it is therefore necessary to have the balks where these fowls are kept, even *lower* than I have already recommended. These fowls having great length, breadth, and depth, attain to almost incredible weights: sometimes a full-grown cock weighing fourteen pounds; averaging about eleven, if good specimens. The hen weighs seven, eight, nine, or even sometimes as high as ten pounds each; but, as some of them commence to lay much earlier than others, a greater difference prevails in their weights than in the weights of the cocks.

"The most esteemed colour of these fowls is ginger; but as there are *pure* bred birds of almost all colours, including black and white, I am in favour of selecting them as much by their shapes as by their colour. No judge of 'short-horns' would, when acting in that capacity, give preference to an animal of 'fine roan,' the shape of which was less perfect than one of a less admired colour, such as red or white; providing the character of purity was evident. Neither do I think any judge of fowls ought to give advantage to any Cochins, on account of colour, if their shapes are less perfect than others of less admired colours. The colour of the legs varies in different specimens, but a 'pinky' is most admired. Their eggs mostly partake of a chocolate colour, but differ very much in deepness of hue; some approaching to almost pink, while others are only a few shades removed from white.

"This breed is generally cultivated as a fancy variety; but, in a work of this sort, it is necessary to take into consideration their qualities as adapted to domestic purposes, as producers of eggs, and as table birds. I am disposed to class them as layers next to the Dutch varieties. Some of the hens are extraordinary producers of eggs; frequently commencing to lay when five or six month's old. Since the first print of this essay was written, I have been devoting more than ordinary attention to discover the correctness of the following statement, made by Mr. Richardson; viz., that the 'hens frequently lay two, and occasionally three eggs on the same day, and within a few moments of each other.' I have done all that feeding might be expected to do, but I have not succeeded in procuring more than *one* egg in a day: I therefore unhesitatingly repeat what I then stated, that 'I know of no instance of a hen having produced more than *one perfect* egg in one day.' I certainly have had two eggs within twenty-four hours; but the last laid was always imperfectly shelled; which fact bears out the declaration of Dr. Gilbert, 'that it is against all laws of anatomy and physiology for a hen to lay more than one egg in a day, unless aborted;' which declaration is supported by Henry Gilbert, Esq., a gentleman eminent for his researches and discoveries in surgery, as well as a zealous cultivator of Cochins. I am in correspondence with the most successful poultry fanciers of the day; amongst whom is Mr. Sturgeon, who states that he knows of no instance of fowls in his possession laying more than one egg in a day. Mr. Punchard states the same; as does also Mr. Simpson, a fancier of acknowledged superiority; fowls of his breeding having recently had seven prizes awarded to them, and one of his hens having received the head prize at Halifax, as the best hen in the yard, weighing upwards of nine pounds. (Mr. Simpson has been kind enough to let me have some of his produce.) Mr. Bailey informs me that he has known a hen lay early in the morning, and again late in the evening. And Mr. Andrews bids me say that his fowls do not *frequently*, but *occasionally*, lay two eggs in a day, but he attributes it to *high feeding*.

"Whether these latter instances may be taken as attributes of this particular breed is more than questionable, knowing as we all do 'that there are exceptions to all rules.' As an instance, I might mention a fact which came under my own observation of one egg being enclosed within another.

"The hens rival the Dorkings as sitters and nurses; and the young are hardy, and therefore easy to rear. The high prices procurable for these fowls is my excuse for not being able to give an opinion on the quality of their flesh; but an extensive breeder of these fowls informed me that he was induced to have one sent to his table, the flavour of which pleased him so much that he is in the regular habit of having them as an indulgence."

We can add our testimony as to the excellency of the Cochin-China chickens as table fowls, for as a test of the conflicting opinions upon the point, Mr. Higgs, whose Cochins gained the first and second prizes at Lewes, had a cockerel three months old killed, of which bird, at the table of a friend, the writer of this partook, two old housekeepers were also present, and the opinion was unanimous, that no fowl could possibly be superior, either in flavour or in appearance. The bird had been caught unfatted in the yard the previous day, stunned by a blow at the back of the head, and then the blood taken from it, by wounding it deeply in the roof of the mouth with a penknife. The bird, though only three months old, weighed, after being killed and picked, *four pounds*. It is this good size at so young an age that renders them so desirable for table. They cost but little for food in that short space of time, and their tenderness is unsurpassable. They are then also of a form that no cook can deprecate. In flavour we also think them most excellent. Another valuable produce of the Cochin-China fowl are its feathers; these are so fluffy as to be nearly equal to goose down.

We have heard from an extensive breeder of Cochins, that hens of this variety have laid two eggs within twelve hours, but then they did not lay the day following.

FORSYTH MSS.

No record is more worthless than a highly laudatory epitaph of the celebrated—it is so usually false as to be always read mistrustingly, and if true, its superlative praise is unrequired. "O rare Ben Jonson" is a model that might be closely imitated, with much improvement to our sepulchral literature. So also thought Dr. Richard Pulteney, and his was not vanity aping humility, for his modest temperament prevented him practising in London, and induced him to pursue the distinguished and useful tenour of his way in the less contentious locality of Blandford, in Dorsetshire. He expressly forbade any eulogy to be inscribed upon his monument; it therefore only records, in unlaboured language, his widow's affection, and by the simple, but very appropriate, ornament of a sprig of *Pultenæa*,

named in honour of him by his friend Sir Edward Smith, delicately indicates and commemorates that he was distinguished among the students of the science in which he most delighted.

He was born at Loughborough, Feb. 17, 1730, of Anabaptist parents, and, after the education of a common elementary school, apprenticed to Mr. Harris, apothecary, of that town; whence, at the determination of his apprenticeship, he was induced to commence practice at Leicester, under all the disadvantages of religious prejudice against him as a Calvanist, and with the strictest regard to economy, which prevented him from purchasing books in his favourite science of botany, which he had pursued with eagerness from a boy.

In the Philosophical Transactions are inserted his observations on the *Sleep of plants*, the rare *plants of Leicestershire*, history of the *deadly nightshade*, historical memoir on *lichens*, and the case of a man whose heart was found enlarged to a very uncommon size. After taking his doctor's degree at Edinburgh he came up to London, where the patronage of the Earl of Bath, to whom he was related, might be productive of the most beneficial consequences to his interests. He was graduated in 1764, with Dr. Garthshore, notwithstanding the opposition of the senior students to the practice of conferring degrees on applicants who had not resided and attended lectures. The subject of his inaugural dissertation was *Cinchona officinale*, which was inserted in the University's Thesaurus Medicus. After being introduced to the Earl of Bath by the celebrated Mrs. Montague, acknowledged as a relation from the family pedigree, and appointed physician to his person, with a handsome salary, he lost, within a year after, his patron, with whom he was just about to travel on the Continent. A medical vacancy happening at Blandford, by the removal of Dr. England to Bristol, and Dr. Cuming being far advanced in years, Dr. Pulteney quitted the metropolis, as unfavourable both to his paternal income and his constitutional timidity; and, under the recommendation of Sir George Baker and Sir William Watson, began his career at Blandford, without intermeddling in the common convivialities and gossipings of the place, or the cabals of his medical brethren, and was not long in establishing that degree of reputation which necessarily brings with it pecuniary affluence. In 1799 he married Miss Elizabeth Galton, of Blandford, a lady whose disposition and attainments comprehended every requisite to give durability of happiness to his domestic life; and, though this union never placed him in the situation of a parent, he experienced, in an amiable relation of his wife (during the latter part of his life), the affectionate attentions of a daughter. He made himself completely master of the writings of Linnæus; his "General View" of which was out of print in four years, and which was translated into French by M. Millin de Grandmaison, with additional notes. The Royal Academy of Stockholm presented him with two medals struck in honour of Linnæus, one by the command of the King of Sweden, the other at the expense of Count Tessin, both engraved in his Life of Linnæus by Mr. Basire, in his best manner. His next publication was "Historical and Biographical Sketches of the Progress of Botany in England, from its origin to the Introduction of the Linnæan System," 2 vols., 8vo., 1790, intended to be prefatory to a descriptive Catalogue of English Plants, or rather to an *abbreviated Flora*, as the original MS. is intituled, which would have recorded the first discoveries of every plant. He furnished botanical materials to Dr. Aikin's England Delineated, Mr. Nichol's Leicestershire, and the new edition of Mr. Hutchins's Dorsetshire; and his arrangement was agreeable to the alterations of the Linnæan system, introduced by Thunberg and Hedwig.

Dr. Pulteney had suffered from a pulmonary complaint at the early period of his life; and a return of this was, what he always prognosticated would be, fatal to him. On October 7, 1801, he was attacked with symptoms of inflammation on the lungs, and there was reason to apprehend his liver was similarly affected. When he found the ordinary remedies, under his own direction, did not succeed, he was the first to announce to those about him the approach of his dissolution, and died October 13th. (*Gentleman's Magazine.*)

The following letter, dated August 31st, 1786, is the only one in this collection from

DR. PULTENEY TO MR. FORSYTH.

As you were so kind as to say you would endeavour to supply some of the deficiencies of my *Herbarium Anglicum*, when you sent me some exotics, I have herewith enclosed a catalogue of such English plants as are either totally wanting to me, or of which my specimens are exceedingly imperfect, and I shall be obliged to you for specimens of any of them, whether they are the produce of the garden, or whether from the places of growth in the natural situation.

Any specimens of exotics that you can spare I should be glad to receive, and if there are such among them as I should happen to have already, and you think it of importance, I will return them. Be pleased to say, when you write, whether any specimens of the Hardwell Cliff fossils would be acceptable to you, as I believe in that case I could spare you a few, having a few duplicates by me.

I have enclosed some specimens of the *Gentiana filiformis* and *Pinguicula villosa;* I hope the capsules of the former are forward enough to contain seed that will vegetate. There is some sand sent with the letter, among which I believe is seed of the *Pinguicula*. These plants grow on our heaths in a sandy soil, by the side of little rills that run down into the bogs.

GOSSIP.

The first pillar of *The Crystal Palace* was raised at Sydenham on the 5th instant, and from the arrangements made there is no reason to doubt that it will be completed and thrown open to the public by the 1st of May, 1853. The arrangements of the garden, of course, will proceed at the same time, and this autumn will not be lost as the best planting time for the out-door deciduous shrubs and trees. The purchase of the Palms from Messrs. Loddiges has been completed.

Mr. J. C. Stevens had a sale by auction of *Cochin China Fowls*, on the 2nd instant, at his rooms in King-street, Covent Garden, and another at Deptford, on the 6th. In the first sale, the fowls were generally of a superior description to those in the sale at Deptford.

Light buff-coloured specimens fetched the highest prices. Thus a pair of chickens, hatched March 6th, the pullet being "fine and light," fetched £3 7s.; "a light-coloured cock," hatched in the same month, was sold for £2; "a beautiful light-coloured imported hen, 1851," for six guineas; and another light-coloured hen, and a light-coloured cock, both hatched in 1851, sold for £5 each. Inferior specimens averaged about 10s. a head. The Deptford specimens were much too leggy to fetch very high prices. One lot, a light cockerel and pullet, was sold for £3 5s.

The *Horticultural Society* purpose to give prizes at their monthly meetings in Regent-street, for Kitchen-garden Produce—a step towards the useful which justifies a hope that this torpid society is at length rousing to what should be the efforts of the national horticultural association. They will offer prizes for *collections* of such produce in May, June, and July; for *Green Peas* in October; *Celery* in November; *Forced Vegetables* in December; *Salads* in January; *Lettuces* in February, &c.

We hear from many quarters that the *Potato disease* has seriously attacked the tubers of that vegetable. We have heard, but have not seen, that in some places in Hampshire they are masses of rottenness. In our own garden we have scarcely one affected, though it lies low. But then *the soil is light; we planted last November, and did not apply any manure.* Where the disease prevails, we suspect they were planted in April, and manure added for the crop. If so, the planters are only reaping the consequences of their own folly. We have warned them against such planting often enough.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Aberdeenshire, Sept. 17. (*Sec.* G. Reid.)
Allendale, Sept. 11th. (*Secs.*, G. Dickinson and G. J. French.)
Bath, Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)
Bridgewater, Sept. 22. (*Secs.*, Mr. J. Leaker and Mr. J. Hayward.)
Brigg, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
Bury St. Edmunds, Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
Caledonian (Inverleith Row), Edinburgh, Sept. 2, Dec. 2.
Cheltenham, Aug. 26.
Chepstow, Sept. 14. (*Sec.* J. F. Hartland.)
Clapham, Sept. 11.
Colchester and East Essex, Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Durham, Sept. 8.
Forfarshire (Eastern), Sept. 15 (Arbroath).
Glasgow, Sept. 10.
Hampshire, Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hexham, Sept. 15, 16.
Hull, Sept. 16.
Kirkcaldy (Fifeshire), Sept. 9.
Lincoln, Sept. 14.
Liverpool, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), Aug. 24, Sept. 14+, 28, Oct. 12+, Nov. 9+, 23, Dec. 14+.
Maidstone. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), Sept. 10.
Newbury, Sept. 3.
North London, Nov. 23, Chrysanthemum.
Northampton, Sept. 27, Dahlia.
Oxfordshire (Royal), Sept. 23. (*Secs.*, C. Tawney and W. Undershell, Esqrs.)
Peebleshire, Sept. 14th. (*Sec.*, J. Stirling.)
Ponteland (Newcastle-upon-Tyne), Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)
South Devon Botanical and Horticultural, Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), Aug. 19+, Sept. 2+, 8, Oct. 14+, Nov. 11+, Dec. 9+, 16.
Shackleewell, Sept. 1.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Trowbridge (Grand Exhibition), Aug. 25.
Turriff, Sept. 17.
Whitehaven, Sept. 17, Dahlias.

POULTRY SHOWS.

Birmingham and Midland Counties, 14th, 15th, 16th, and 17th December.
Bristol Agricultural, December 7th, 8th, and 9th. (*Sec.* James Marmont.)
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).
Cornwall (Penzance), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)
Liverpool, Sept. 23.

WHAT IS THE CHEAPEST AND EASIEST MODE OF GROWING PINE-APPLES?

This appears a broad question to be grappled with in a single paper, but it will be obvious to our readers that we can do no more than point to the chief features of the case, and endeavour to disperse mistaken views concerning them. That the latter exist, an extract or two from queries received will plainly show that fallacious impressions concerning them must only end in expense and disappointment. That pines *can* be grown in a more inexpensive way than in former days, is very true; but why? Because they will do with a lower temperature? By no means. They equally require heated structures now as formerly, and plenty of light, involving, of course, the expense of glass.

To give an instance of erroneous impressions, one querist writes thus:—"……I should like to have a pine-apple on my table once a week all the year round. To do this, what shall I require? I suppose I can start the plants in a few pots in my greenhouse, then move them into some cold pits, and afterwards push them on in a hotbed or two. I should like to grow some as large as those I saw in the Botanical Garden, Regent's Park, a week or so since." Now, to foster such impressions as these is no part of the duties of The Cottage Gardener. Let us, then, try to show wherein the errors consist.

It will be in the memory of most who take this work, that some six or seven years since, it was stoutly affirmed that the pine-apple could be cultivated out-doors in Britain, or, at least, in the warm climate of Devon or Cornwall. All this, indeed, seemed to be backed by facts, to those who are content with the surface of an argument. Plants, it would appear, had been previously prepared under the most favourable circumstances of heat, air, moisture, &c., and the fruit being formed (we believe past blossoming), the plants were turned out on warm materials, surrounded by non-conducting matter, just when outward conditions approximated those of tropical climates. Favoured by a pretty good season, and assisted by all possible appliances, they actually, it appears, produced very good pines in a Devonshire climate. Such a strained affair, although very desirable as illustrative of what *can be done* with

the pine in extreme cases, is by no means qualified to introduce a new era in their culture, or to prove that the pine enjoys a much lower temperature than has hitherto been the practice of good pine growers. Strange to say, soon after this, the very experimenter gave a plan of a new house, built by himself, for pine culture, in which the amount of piping or heating-surface appears such as is seldom witnessed in the same area. In this plan, now on our table, there are no less than four lines of piping, parallel the whole length of the house, for *bottom heat alone*, and four more lines parallel for atmospheric heat; and this, too, in a house only sixteen feet wide. Besides all this, there is a steam-pipe all round, which, it is presumed, may add to the heat as well as moisture. This plan may be found at page 188, vol. v., of the *Horticultural Society's Journal*. Well may amateurs, and those not "well up" in gardening, be puzzled at such conflicting opinions and practices.

That every species of business has of later years a tendency to be more economically conducted, because the careful study of elementary information tends to a juster appreciation of what is required for successful culture, we not only do not deny, but stoutly affirm. The cost of production will doubtless be lessened; but it becomes every honest horticultural fugleman to set his face against such extreme opinions, or one-sided statements, as can but involve those misled by them in unnecessary expenses and vexatious disappointments.

Thus much will serve to show our worthy querists, and others similarly situated, that they must not think of "cold pits," "greenhouses," &c., in the cultivation of the pine-apple; such may be resorted to in very necessitous cases, but must not be counted on as part of a system, or as identified with high cultural principles.

To come to the point—seeing that the same heat, air, moisture, and light are requisite now as in former days—how is the cost of production lessened? Why, principally in building materials. Bricks are cheaper, glass much cheapened, and timber, thanks to the saw mills, much lessened in cost. Here lie the economic points; for labour is not cheaper, and as for any economic advance this way, we know of none whilst pines must be grown in pots. We long since pointed to Mr. Hamilton's system as being, in our opinion, the very thing for our much-in-a-small-space man; but, forsooth, objections so multiplied, coupled with something like foregone conclusions, that whatever merits the practice might possess were speedily "lost in the fog."

We will now beg the attention of our readers for a moment to what is termed *Pannel's heating apparatus*, as a source of heat; and this, with the inexpensive simplicity of an orchard-house, would seem to be worthy of adoption in the year 1853. Having heard strong recommendation of the pines at Park Hall, near Eckington, the seat of Mr. Middleton, we immediately took the liberty of writing to Mr. Henry Barnes, the gardener. Mr. Barnes, in an exceedingly kind and sensible letter, at once most courteously answered every question, and we beg to offer an extract or two. "I am glad to say that I have been very successful with my pines. The plants are turned out in the open mould, over a tank, heated by *Pannel's apparatus*, which enables me to keep up a most congenial moist heat as high as I please, and at the same time I have a flow and return pipe all round the house for top heat; but this has already been described in The Cottage Gardener, and I must do the inventor the justice to say, that I never yet saw an apparatus that so fully accomplished the end required as that does. I have also a pit attached to the pinery, which is heated by the apparatus; and I have cut thirty good melons from four lights, of the highest flavour, and I have a second crop coming on, which are looking well, and this will be off in time for my cucumbers for the winter months." Thus far Mr. Barnes. Our readers will, doubtless, join in thanking Mr. B. for his ready courtesy.

Now, it appears that Mr. Barnes is not far from the Hamiltonian system, for he plants out; he has discarded pots. In high atmospheric temperatures too, it would appear that he resembles Hamilton; but from what we can learn, he uses much stronger bottom heats; we are told 90° to 100°, whereas Mr. Hamilton seldom exceeds 84°.*

By turning to No. 197 of The Cottage Gardener, page 224, our readers will find some account of the apparatus by Mr. Pannel, of Leicester, himself; we have not room here for the extract. Economy, then, in the production of pine-apples must be sought principally in the simplicity with which their culture is carried out. Whatever structure is employed, however, certain conditions *must be* guaranteed, or success will be proportionably incomplete Let it be made a point, that 80° bottom heat be available, if requisite, at short notice in the depth of winter, and also that the means of heating be able to furnish with facility 70° atmospheric heat; added to this, the speedy production of any amount of atmospheric moisture. We do not wish to have it inferred that such extreme heats are to be made ordinary use of in dark weather; but extremes must be provided for, if good pine culture is to be carried out. Depend upon it, starvation suits not the pine; and we have here simply suggested the securing *winter conditions*, knowing that this done, the rest of the year will be right as matter of course.

It will now become necessary to know, not only the efficiency, but the cost of Mr. Pannel's apparatus; for the public have a right to expect these things done in a more economic way, or the culture of pines cannot be extended. We will, therefore, seek for information in detail, as well as testimonials connected therewith, and lay them before the reader in due time, with further comments. In the mean time, we may direct the attention of our readers to what is commonly termed "dung-bed culture." Here, flues or piping may in a great measure be dispensed with; but then it is obvious that the supply of fermenting materials must be certain and continuous. But we think it far from being a good policy; for those that have but small gardens, and keep, it may be, a horse, or two cows, &c., will, at certain periods, have other objects than pine-apples to demand assistance from fermenting materials. Our advice, therefore, to all such, is rather to incur a few pounds more expense in the first outlay, than to risk disappointment in more ways than one, by depending on fermenting materials alone. Besides, although capital pines have been produced this way, yet it is but an unsafe or wasteful plan during long winters. The perpetual changing and "topping up" of linings, the anxieties to dispel stagnant moisture without too much lowering the temperature, and the exactions on the manure heap, to the detriment of the early cucumber and melon bed, constitute so unscientific, so laborious a scheme, as to make the unhappy wight who "plays the first fiddle," as our good friend Beaton says, pass many a sleepless night. We must soon return to this matter, and hope that the desultory character of these remarks will be excused. R. Errington.

* We have received the following note from Mr. Barnes on this point. "In reading over an article in The Cottage Gardener of the 29th ultimo, on the *Heat for Pine-Apples*, I was rather surprised to find some remarks respecting the *bottom-heat* of my pines, but the parties were quite right in stating that the ground thermometer has ranged from 90° to 95°, but they were told at the same time that it was plunged to the *bottom* of the mould, which is five or six degrees higher than where the principal roots are, and I wish it to be understood that this heat is not kept up during the *winter months*, when the plants are at rest. I keep a high temperature at this season, with plenty of moisture, and my plants do well, which I think is a sufficient proof that it suits them." This removes all the wrong impression about the high bottom-heat employed by Mr. Barnes; it is evident he employs a bottom-heat of from 84° to 89°.—Ed. C. G.

PLANTING FLOWER BEDS, &c.

[The following letter is such a tissue of interwoven queries and information, that we insert it entire, appending some commentaries by Mr. Beaton.]

"Mine is a geometric flower-garden, looked down upon from the drawing-room windows. The beds are on turf, and, being very numerous, I am anxious, if possible, to fill a few of them with hardy perennials that will flower for some time, and thus save the gardener's labour, and diminish the stock of tender things that too thickly inhabit the frames during the winter. Am I likely to find the common *Holly-leaved Berberry* patient under the pruning-knife, so that it might form the outer row of a couple of beds facing each other? and will it flower if regularly cut back? Within these I think of planting the old *Tiger Lilies* and *Bee Larkspurs*, filling the centre with tall late-flowering varieties of *Phlox:* can any one recommend a better assortment, and name any other things—novelty being less an object than long duration of bloom? My *Scarlet Geraniums* are so gorgeous against a south wall, which is broken into recesses by buttresses, and which are slightly protected by reed frames in the winter, that I wish to increase such valuable ornaments. Is Rollisson's *Unique* likely to attain a height of nine or ten feet? Is the new *white variety* sent out by Messrs. Henderson, of Wellington Road, worth planting in such a situation? and is Henderson's *Defiance* geranium distinct from, and superior to, Low's *Amazon*, which appears the perfection of beauty? I have a small plant growing against the wall, bearing one bunch of flowers, which has been open a full month, and is still fine; the truss is large, and the individual flowers equally so, while their substance is such as to resist decay in a wonderful manner. The *Flower of the Day* geranium, would, I imagine, scarcely answer my purpose, and I fear that *Petunias* are too delicate to stand the winter, even protected like the geraniums. Plants that will flower the whole of the summer and autumn are, of course, the only things worth growing. The prettiest new thing I have seen is the Californian *Diplacus*, introduced by the Horticultural Society; I saw it in Messrs. Veitch's magnificent nursery, a week or two since. If it proves hardy, and continues long in bloom, it will be valuable for bedding, as the individual flowers are large, and the colour new and striking.—A Devonian."

I think "Devonian" sent me a plan of his geometric flower-garden, on which I cannot lay my hands just now, but I well recollect the favourable impression it made on me at the time, and I know the shapes and sizes of most of his beds from memory. That it would be a most desirable point gained to get a sufficient number of hardy plants to keep a garden in bloom all the season, no one will deny. Many more correspondents have suggested the same plan, but unfortunately it cannot be done successfully; and before I reply to any of "Devonian's" questions, I shall here briefly state a few of the reasons why geometric gardens, indeed any garden laid out on a regular plan, is not suited for the old mixed style of planting. I may also premise that my own opinion of the fitness of what is called "herbaceous plants" for furnishing a symmetrical flower-garden is so well known, that it now seems a dry subject to refer to. They do not erect long rows of "model lodging-houses" for members of parliament, because they cannot make *a tenant* for a given house, *the house* must be made to suit the tenant.

According to the present fashion, bedding plants are lost, or next to lost, if they are not planted in masses; and if we had only one bed, would it be better to have it filled with Scarlet Geraniums, or with Calceolarias, Verbenas, &c., or be planted in the mixed style, with herbaceous plants, some of which would be in flower from March to October? Surely the mixed style would be the best here, as producing variety. Now, instead of one bed, a hundred beds might be so scattered over a given surface, as that none of them would appear as being part of a plan; every bed would be, like the tub, on its own bottom, without any reference to the other ninety-nine. Here, again, the mixtures, and the clumping, or massing way of filling the beds might be adopted without any great violence to taste or prejudice; and this is by far the cheapest style of gardening. The display of flowers might also be very gay, but it could not be striking after what we have been accustomed to with "bedding plants." But this bed mode of planting herbaceous plants is not by any means the best, it is only a compromise between taste and the purse. Borders, and the outsides of clumps, for choice shrubs, are the true positions for herbaceous plants. The moment you arrange two beds, or any number of beds, on any given principle, as in a geometric figure, the style of the design is higher in degree, and, therefore, we maintain that the mode of planting should also be of a higher style to correspond. Without insisting on particular tastes, and without reference to the nature of the grounds, for a flower-garden, the true geometric is the highest style of the art of laying-out flower-gardens; that is, where the ground is suitable, and the owner is not averse to that particular style; therefore, if that be so, the very highest style of planting should be aimed at for geometric gardens. It is quite true, that fashion is an arbitrary law; but this law being the fashion of the present day, those who desire to be in the fashion, and to keep within the letter of the law, must plant geometric gardens; and all other gardens, which are laid out symmetrically, in the "bedding style."

Again, there are as many degrees of excellence in laying-out and planting a geometric figure as there are in any other designs; then the highest degree of the geometric style is that in which suitable beds or spaces are laid down for all the colours, *and the due quantity of each colour*, and also for the different sizes of the plants that are to be used in making out the composition or picture, and from this most and all-important rule there are no exceptions. Hence it follows that an artist, or designer, may be at the head of his particular calling, but unless he is well acquainted with all the suitable plants used for bedding at the period he works, he may not be able to put three beds together without making a blunder; and, if a faulty design is once laid down, the mixed style of herbaceous plants is the safest way of planting, because the glaring faults in the design are more easily hid that way than by the true bedding-out in masses. Of course, all this is only known in "the craft;" but it is so far unfortunate, that after having a perfect figure laid down one should be obliged to plant it so that even a designer might think the planting was as much intended for hiding faults, as for giving the charms of a flower-garden. So that it comes to this at last, if one chooses to despise the fashion of the day, in this particular, and set the law at nought, he may still be as open to public criticism as he who attempted to follow the herd and lost his way among the bushes. Still, there is this consolation, that all public writers of the present day despise public criticism on private concerns, private tastes, and private individuals, as such, and whoever wants the assistance of The Cottage Gardener to carry out privately any notions round about the garden, shall have it without reference to this or that rule or fashion. The Cottage Gardener goes farther, and says that every one has a perfect right to follow out his own views in his own way, provided always that he does not insist on others doing as he is doing.

The first question on "Devonian's" list, is—Will the common Holly-leaved Berberry (*Berberis aquifolium*) bear the knife to keep it low as an edging plant, and flower? I have used it that way, and found it to answer perfectly well. The time for pruning it for that purpose is early in May, just as it is going out of flower. The strongest shoots are to be cut back to the height required, after that it shoots out laterally, making a

dense carpet. Mine was kept about a foot high, and it flowered beautifully. After the third season after planting, it became necessary to cut back the underground suckers on both sides of the row, the space being confined to thirty inches. With the exception of the *Cotoneaster microphylla*, I do not know a better plant for that purpose. The *Cotoneaster* has the advantage of its coral berries all the winter, and is also more of a trimmed plant without the use of the shears, and if the Berberry is cut with the shears the leaves must be cut through, and that spoils it altogether. Both of them will grow on the poorest soil, and the Cotoneaster will soon make an edging from three to four rows of cuttings, put in where they are to remain, and they may be planted any time between this and Christmas.

A belt of the *Tiger Lily*, another of the *Bee Larkspur*, and the middle with autumn *Phloxes*, as "Devonian" proposes, will make a good mixture; the three coming into flower in succession. I would have a patch of the Natal Gladiolus (*Gladiolus psittacinus*), between every two of the Tiger Lily, to come in after the lilies were over, and I would have plant for plant of the *Rudbeckia chrysomela* in the Larkspur belt, to flower along with the Phloxes after the Larkspurs had done flowering. It is true that none of these have the same style of flowering, but in this kind of mixture that is not of so much consequence as the length of time each sort would keep in flower.

I have often desired to see such *a wall of scarlet Geraniums* as "Devonian" mentions, and whatever fence is used for training Geraniums, or other plants against it, ought to be divided into spaces, as his wall is with the buttresses, and each division be planted with a different variety. The *Unique* Geranium will not grow to nine or ten feet in so many years. I had one for seven years so planted, and covered with glass in the winter, and the wall was also protected with hot-water pipes, but *Unique* did not rise above five feet all the time. The variety of it called *Queen of Portugal* is more likely to suit him; it is a much stronger sort, with the growth, leaves, and flowers the same as in Unique. I am quite sure that I saw this variety at the Pine-Apple nursery this summer, in going round with Mr. Appleby, but there was no particular mark to it, and the lilac variety of it I mentioned the other day makes the third form of Unique. I also saw a large plant of the true Unique turned out-of-doors in the garden of the Horticultural Society last July, and every head was seeding, confirming what I have always said, that a sudden or violent check would cause many of the shy seeders to become fruitful; but whether the seeds ripened I did not hear, and that depends on how the pollen acted. The disposition to seed was evident in this very shy seeder. With its own pollen, it comes as true from seeds as if it was a wild species.

The new *white variety of scarlet* inquired about, I do not know. My own white seedlings are as good as any I have seen, but not good enough for selling yet. Neither do I know *Low's Amazon*, but I have heard wonderful tales about it, and I am pleased to hear "Devonian" calling it "the perfection of beauty." I shall soon be at Mr. Low's nursery, and will report on it, and all other novelties that I may see there.

Petunias are not at all so impatient of frost as "Devonian" thinks; many of them will live over the winter, where no scarlet Geranium would keep a leaf, and *Verbenas* the same.

The *Shrubland Rose* is the very finest wall plant we have. I had it and a purple one, three years against a cold wall, guarded with mats, and they were more admired than any plants in the garden. At last they got too large for the space, and they were cut down to make room for a *Mandevillea*. Damp is more against them than frost. The Shrubland Rose is now in every good flower-garden all over the country. It is a seedling from a delicate variety called *Highclere Rose*, by the pollen of *Desdemona*; a very strong, old Petunia.

There was a very small plant of the new Californian *Diplacus*, or rather *Mimulus*, at one of the exhibitions at Chiswick, but I could form no opinion upon it, and therefore said nothing about it. The straw-colour of the flowers is new; and now I shall trust to "Devonian's" account of it, and recommend it highly. There was another plant shown twice this summer—the beautiful *Indigofera decora*—which I passed, because, after giving its proper culture once or twice in these pages, no one seems to succeed with it for the exhibitions. It requires to be grown from October to May, and then it flowers all the summer. Rest it for the winter and it does no good. D. Beaton.

PECULIARITIES OF THE SEASON.

Some time ago, attention was directed to the importance of becoming acquainted with the latitude, elevation, and the highest and lowest temperatures of the places whence we received plants and seeds. Too great attention has hitherto been paid merely to latitude and *average annual* temperature, and too little attention has been manifested, not only to the highest and lowest temperature of places, but also to the very important fact, whether the atmosphere was dry and unclouded in summer, as in the eastern parts of Europe, or cloudy and misty, as in many parts of Ireland, and the south and west of England. In the latter case, the *growing*, in the former case, the *fruiting* and seeding principle, would severally be at the maximum. Thus it happens, that though Dublin be 4° of latitude north of Heidelberg, there is scarcely any difference between the mean annual temperature of the two places, though the mean winter temperature of the first is some 6° higher than the latter. Nevertheless, as the summer temperature of Dublin is nearly 5° below the temperature of Heidelberg, and the atmosphere, in the latter case, is much clearer than in the former, we see, at once, the reason why fruits rich in sugar may ripen in the one case and not in the other. While, on the other hand, we have a solution of the fact, why plants that thrive uninjured in winter at Dublin and in Cornwall would require protection in Germany.

These, and kindred matters, have been frequently forced upon our attention this season. If sudden diversity, and extremes, are the *advantages* of our insular position, then surely we have every reason for congratulation; and never do I recollect a season in which these extremes were more apparent than in the passing summer. The most weatherwise, when pulling on his night-cap, could scarcely predicate what he should have to do in the morning. All rules and theories, as to protection and other matters of practical detail, had to be suited to ever-varying circumstances. Fortunate was he, who, by timely care, governed the circumstances, and did not quietly and easily allow them to defeat him. Without going far from our own homesteads, we shall, by-and-by, get practically acquainted with the climates of all latitudes. In *April* and part of *May* we had as clear sunshine, and nearly as dry an atmosphere, as is to be found on the plains of eastern Russia, while the nights were as frosty, and the winds as keen as could be felt, at similar seasons, on mountain chains, or great elevations in tropical regions. Everything out-of-doors required extra management—guarding everything tender from undue excitement during the day was a prime matter of consideration. Many found, to their cost, that the *protectionist* doctrines of Mr. Errington were no delusion. Many more will wish he had not brought such a term, *again*, into such popular distinction. For all forcing operations, no weather could have been more

favourable. Everything rejoiced in the extra sunlight where attention was paid to root action. Plants in pots and greenhouses never were more healthy; never, in my recollection, were so little troubled with insects, and required no extra attention, except artificially moistening the atmosphere in the day-time, and a slight shading to break the force of the sun's rays.

Then came *June*, not with its usual bright and flaming sun, but with its clouds and cold rains, resembling the drizzle and the mist of the far north-west in October and November. While such weather lasted vegetation stood still. We began to despair of flower-gardens and harvest-fields; to think that good crops of apricots and peaches might do for ball practice; and to fancy that showy plants in-doors would be poor compensation for the want of tender, nice vegetables at the festive tables. True, insects were tilted to their last home in crowds; *wasps*, these fruit robbers, which seemed to come the faster the more that were killed, deserted the tournament. Still, as was referred to lately, mildew came in myriads, and altogether, though not inheriting much of the gloomy, I began to look upon the future of gardening as somewhat ill-omened. But as if to read us a lesson for our doubts and scepticism, almost as quick as the *presto* of a magician, the scene is changed. The extreme of heat succeeds to what, at such a period of the year, was the extreme of cold; the earth becomes steaming hot almost immediately; vegetation progresses as I never witnessed it do before. Almost immediately the flower-beds are covered; the hard buds are expanded and opened; roses come out in a galaxy of glory; tender plants in the greenhouse are just in their element; the corn crops stand erect and flourishing; and the month of *July* will long be remembered for giving us a taste of a tropical climate with a clear unmistified sun; the thermometer in the country fully 95° in the shade, and some 40° more in the sun, while in larger towns it was considerably higher, forcing us to doff our felt hats, and frieze coats, and to patronise the straw and the gossamer. Great as the heat was, it was not found particularly oppressive so long as people were in the open air, suitably appareled, and actively employed. This is the reason why people grumble so when they go into our close plant stoves; the closeness and humidity of the air distresses them. This was also the case on the present occasion, when the temperature got considerably lower, but with a misty air loaded with vapour, waiting for cold to condense, or the electric spark to send it in copious rain drops to the earth;—the pressure upon the animal spirits then was greater than on the barometer. We were thus presented with two distinct features found in tropical regions; nor did we wait long for a third, for thunder storms and rain came, that, while they lasted, could not have been much less alarming than an Asiatic typhoon.

August has, as yet, continued unsettled; but if fine, bright weather would now set in, we would forget all little casualities, and remember a July with gratitude, that has turned, what otherwise must have been a late and deficient harvest, into a moderately early and prolific one.

Some of these casualties, may, however, be chronicled. I alluded lately to the *Bean* crop. There can now be no question that *Potatoes* will suffer to a considerable extent. Some early kinds taken up seemingly quite sound, and stored in dry earth, are showing signs of disease; and all I see in fields or gardens are less or more affected. *Peas* for July and August gathering have been more than ordinarily mildewed; and *Onions* have been similarly attacked in many places. The corn-fields are not our province; but I believe that mildew exists as yet to a trifling extent. The deluging rains have laid the crops considerably, but *with fine weather little damage will be sustained.*

Getting into our little *greenhouses*, we hear and listen to many complaints. Fine plants are scathed, as if burnt with lightning; and to the storms many of our friends attribute their disappointment. I cannot tell them point blank they are mistaken; but my impression is, that a little shading with canvass, or a little whitening and water brushed over the glass, when the sun was so hot and clear, would have averted the calamity. The only house plants that I noticed to have suffered with me are of *Begonia fuchsioides*. They looked bad enough, and are just now looking a little better. I trusted to their thickish leaves; I believe a little shading would have kept them right.

Again, some of our friends pride themselves on their *Grapes* in their greenhouses; and in some cases these have suffered dreadfully; some were sent quite roasted; and the worst of it was, the footstalks of the bunch were so parboiled, that I had no hopes that the berries would ever swell. Here, again, the lightning was blamed! I believe that if air had been given *early* enough, and *plenty* of it, the ruin would not have happened. In the case of thin-skinned and tender grapes, like the Sweetwater and the Grisly Frontignacs, a little shading would have been advisable.

Turning from the house to the balcony, basket, and flower-garden, I find that little harm has been done, unless where the soil was very thin and sandy, in which situations many were burnt up. In all loamy soils, deep and rather cold-bottomed, the plants flourished amazingly, though now and then one would be burned up, and all the rest flourishing. I suffered in this respect much more from the tremendous rains, and short periods of hail, than from the heat; the plants seemed to revel in the latter. My greatest misfortune has been with some beds, vases, &c., of *Kentish Hero* Calceolaria. I formerly praised it to the echo. This season they were gems, and now they seem next to perfect wrecks, the leaves being cut to pieces, full of holes, or black spots, and altogether giving one the blues to look at them; I hope they will yet recover. Other things have been injured by the rains taking off every flower, but a little bright sun brings out plenty more.

In the shrubbery, &c., I have suffered but little; not so many of my acquaintances. Some have had the old leaves of their *Rhododendrons* burned and spotted, while the young shoots escaped, the sun fastening on those parts that presented most resistance, and were less supplied with moisture; while others, again, have had the young shoots and leaves destroyed, seemingly, from the inability of the roots to supply moisture fast enough for the excessive evaporation. I have just had a long letter about a fine *Araucaria imbricata* that has lost its leader, though bountifully supplied with water at the roots. The writer attributes it to lightning. From some places there are direful accounts from the *fruit*-garden; but, in the majority of cases I have heard of the calamities have happened in light soils, where the great evaporation would soon draw off the moisture in the thin soil, and in which, so far as I am aware, no attempts had been made to increase, or husband it, by watering or mulching.

With the exception of insects appearing, I have chiefly suffered by the too early ripening of some *Apricots*, and the dropping of others, both of which I blame myself for, because I think they might, at least, have been partially avoided by watering and shading. Many plants that will stand such heat when used to it, cannot endure sudden extremes. Comparing notes on such matters will be of general interest. R. Fish.

LYCOPODIUM.

(*Continued from page* 293.)

A day or two ago, we saw, in a lady's parlour, a very ingenious and pretty use to which the *Lycopodium apodum* was applied. Long, oval-shaped, ornamental pots, or, perhaps, they might be dignified with the names of vases, about six inches deep, as much across, and fifteen inches long, were well-filled with soil, and some wide-necked glass bottles plunged nearly up to the rim in it. Then the surface was planted with the Lycopod, and completely covered with it. The vases had saucers of the same form; in these they were placed; this prevented the water, when applied to the soil, from dropping upon the carpet or floor of the room. The glass bottles were to contain cut flowers; and in the instance we saw they did so, and certainly had a novel and very pleasing effect, having much the appearance of miniature flower-beds upon a tiny, beautiful, green lawn. The vases were made of the material called terra cotta, and would last for years, if not broken by accident. This idea, we think, might be carried out to a great extent. Why not have the vases made larger, and the spaces where the bottles are filled up with plants in pots grown in a frame or greenhouse for the purpose, brought in when in flower, and renewed when the bloom is over? Plunged in this way, and the surface covered with the pretty green Lycopod, very little water would be necessary, and the roots of the plants would be then protected from the drying influence of the air in the room. The flowers would last much longer in perfection, and every bud would bloom. The vases might be made of any material combining elegance of form and durability, such, for instance, as glass, or cast iron, painted of various colours.

Lycopodiums may be used, also, to cover the borders of a conservatory or greenhouse. This has been done in many places at different gentlemen's seats, and in such a situation they are always admired, the green being so fresh and beautiful. We grow some of the drooping species in ornamental or rustic baskets with the happiest effect. In particular, we have some made of glass of a circular form; these are large enough to contain a sufficient body of soil to supply them with nutriment. The kind used is the very ornamental *Lycopodium stoloniferum*. One specimen of this species measured a foot across, as much high, and drooped considerably over the edge of the glass vase, and was deservedly much admired.

The following is a list of principal known species:—

Lycopodium apodum (Footless Lycopod).—This is the most dwarf-growing of the genus, and is very suitable to grow, either in vases or in pots. It is universally admired, but requires a high degree of heat and moisture to grow it to perfection.

L. apothecium (Unsporecased L.), is also very dwarf. This is nearly hardy, but grows best in moderate heat.

L. circinatum (Circular L.).—So named from its habit of growth; the shoots grow round a kind of root-stock, push forth at first horizontally, then bend upwards in a circular manner, having then much the appearance of a bird's-nest. Very beautiful, but tender, requiring the heat of the stove all the year.

L. cordatum syn. *cuspidatum* (Heart-shaped-leaved L.).—Equally beautiful as the last, but of a more straggling growth, requiring to be trained with a stick in the centre, and each branch drawn towards it, so as to form a neat, low bush.

L. cæsium (Grey L.).—Of this species we have already written. Its rich blue-green colour can only be brought fully out in the shade. The sun turns it green, frequently brown.

L. cæsium arboreum, syn. *Wildenovii*, of Hooker.—A fine variety, or, perhaps, species. We have seen, a few days ago, a fine specimen trained to the trellis on the back wall of the orchid-house of H. Wheat, Esq., at Norwood Hall, near Sheffield. It was in a shady situation, and the colour of the foliage was very rich and pleasing, much more than we ever saw it before. For this purpose it seems well adapted.

L. denticulatum (Toothed L.).—A well-known useful species, suitable for covering the borders in a greenhouse, or to grow in pots in shady places. This species has lived through a mild winter in the open air, in several places, on shady rock-work. A very useful, easily-propagated species.

L. dichotomum (Two-branched L.).—Very pretty, but rather scarce.

L. flabulare (Slender L.).—A drooping species, with slender branches, of a pale green colour.

L. Galeottii (Galeott's L.).—A handsome, upright-growing species, worthy of being in every collection, though but little known, and very scarce.

L. lepidophyllum (Scale-leaved L.).—This is the most tiny of the genus, a wine-glass will cover the largest plant. It is curiously pretty, and is the most rare of all the tribe. A gem indeed, but requires stove heat constantly.

L. Schottii (Schott's).—A very quick-growing plant, of the most drooping habit, and consequently most suitable to trail over rock-work.

L. stoloniferum (Runner-bearing L.).—This forms a handsome pot-plant, branching, rather drooping, but if the central stem is tied to a stick, the branches droop all round, and it then forms a little weeping tree.

T. Appleby.

(*To be continued.*)

THE HOLLYHOCK.

This old-fashioned ornament of our gardens for several years has been almost jostled out of the ranks of fashionable flowers by its more manageable competitor, the Dahlia. Twenty or thirty years ago, the Hollyhock was all but banished as a flower not worthy to be cared for, much less improved, or, indeed, grown at all, especially by the scientific, or, perhaps we might say, fantastic florist. The cause, if not a capricious or false taste, was, perhaps, the extreme capability of the Dahlia for improvement. As soon as this was discovered, every florist, great and small, rushed to the diggings. The word is now so familiar that it will be understood if applied to any pursuit by which *gold* may be obtained. Well, raising new Dahlias was quite the fever, and this excitement raged through the length and breadth of the land. Acres upon acres of seedlings were planted, and seed saved in abundance, with judicious care, for which English florists are so remarkable. Girling, at Stowmarket, Widnall, at Cambridge, and Levick, at Sheffield, were, perhaps, the most successful in their day in the Dahlia diggings, and they had their reward. Through these earnest and zealous efforts the Dahlia became the flower of the day. It was not uncommon to give £30 or £50 for the stock of the-then-thought-the-best Dahlia in the world. Now this Dahlia fever almost banished the aspiring Hollyhock from the gardens of the florists; but time, the great modifier, softened the rage both in favour of the Dahlia, and disfavour of the Hollyhock;—the latter began to creep up again; being first thought worthy to occupy a place amongst the shrubs, or behind the favoured rival. Some less ardent lovers of the Dahlia began to collect the best double Hollyhocks, observed points of floral excellence in them, and where wanting, began to endeavour to produce them. Success somewhat unexpectedly rewarded these efforts. Chater, of Saffron Walden, Bircham, and some florists near Edinburgh, soon proved that the

Hollyhock was as capable of improvement and bringing within the ranks of florists' flowers as the Dahlia. Ingenuity soon found out a method of increasing and preserving the kinds that had been so improved, and at this day we might almost venture to say the Hollyhock looks down with lofty dignity upon its now humbled rival. Comparing the merits of these two rival flowers, both flowering in autumn, and both possessing properties such as the florist can recognise, we should be inclined to give the palm to the Dahlia, chiefly on account of the length of time it ornaments the flower-garden, and also in the now exquisite beauty of colour and form to which it has been raised. Whether the Hollyhock will ever attain to such decided perfection of colour and form is yet to be proved, but the fact of its bloom soon being past will be, we fear, a bar to its becoming that general favourite that the Dahlia has been, and still is in a less degree.

Certainly the improvement in the Hollyhock has been wonderful. Very lately we visited a garden in Hertfordshire, where they were cultivated to a great extent; several of the best known sorts were in flower, such, for instance, as *Walden Gem*, *Comet*, *M. C. Baron*, &c., and we were much gratified with the sight. On the premises was a long row of seedlings, most of which promised great things, having uncommonly large full buds. Several were open, and showed great merit; but one more especially, and when we say that it was like *M. C. Baron* in colour, but far exceeded it in size, fullness in the centre, with superior guard petals, our hollyhock amateur readers will understand what our feelings were when looking at and admiring this truly fine seedling. This fine collection is growing in a garden at the back of the Crown Inn, near the station at Broxbourne, on the Eastern Counties line of railway, and any one desirous of a day of quiet fishing will find this an excellent spot to visit; and there, in addition to the, to us, doubtful pleasures of angling, he may see a truly superb collection of Hollyhocks, and the landlord will show them with all the zest and politeness of a true lover of flowers. So much were we pleased with what we saw there, that we determined forthwith to take pen in hand, and commence a few essays on this flower, for many years neglected, and even now not known to the extent which it deserves. We mean, that in many parts of England, Ireland, and Scotland, there are hundreds of growers of flowers that have no conception of the improvement that has been accomplished in the Hollyhock. They may have heard a rumour of such a thing, and they may have seen advertisements of the kinds in the catalogues of the growers, but they must grow them before they can understand and appreciate their beauties. For the benefit of such into whose hands The Cottage Gardener may come, we shall direct our attention to the following points:—1st. Soil and situation. 2nd. Selection of kinds. 3rd. Planting and after management. 4th. Propagation by cuttings and seed; but our proscribed space is now full, and therefore we must say—*To be continued.* T. Appleby.

MILDEW ON PEAS.

Next in importance to hastening the growth of any production, is that of retarding it beyond the usual period at which it is generally found in perfection. Hence the "having a vegetable product all the year round," implies, in most cases, that that vegetable has been forced, produced naturally, and retarded. That one and the same crop of any plant cannot do all this, must be obvious to every one; but the judicious treatment by which it is more or less accomplished forms the skilful part of the management. Of late years much has been done in this way with fruit. *Grapes* are said to be attainable in good table condition from the first of January to the last of December; and *Pine Apples* the same; while most of the small fruits, more common in our gardens, seem hitherto to baffle the skill that has been directed towards maturing them in the dark days; and though currants at Christmas are not unusual, their presence at that time is more due to their property of resisting decay, than to any extraordinary treatment they may have received during their growth; but as our duty is more especially with kitchen-garden vegetables, we have only digressed as above by way of analogy, as much the same laws govern the one class as the other, and difficulties, and now and then failure, attend both.

That atmospheric causes have much influence in the retarding process, must be apparent to every one; and, unlike the forcing department, we have no means of counteracting the effects resulting solely by those changes of the air, which, however beneficial for one part of a plant's existence, are diametrically opposed to its welfare at another. For instance, September is usually as warm a month as May; the thermometer will range as high, and frosts are, perhaps, less common in the former month; yet mark the result: *Peas*, which in May flourished with a vigour which made their daily progress visible to all who took the pains to look, will now be found to languish, and probably perish, in spite of all the artificial assistance that can be given them. This example, of course, relates to the half-advanced crops in the two months respectively mentioned. Now, that something may be done to mitigate this evil, it is our purpose to show; at the same time that it will always do so, is advancing too much, because so many other causes may be in operation at the same time; and if those of an injurious kind predominate, farewell then to success. However, let us not give up the contest in despair, and, taking a late crop of peas as our text, it requires no extraordinary research to find out that *mildew* is one of the principal agents of this plant's destruction. This insidious enemy, which assuredly, of late years, has been on the increase, is much more difficult to extirpate than any disease engendered by insects of any kind; and when it once seizes on this plant before the pods are formed and filling, then adieu to all prospects of a satisfactory crop. By some peculiar feature in its organisation this pernicious parasite spreads with frightful rapidity; and from the healthy green which the foliage ought to assume, it soon wears a grey hue, and eventually one of mealy whiteness; at which stage every breeze scatters its progeny far and near, to establish itself on any object calculated to give it support.

This tiny fungus, which in one or other of its forms exists on several plants differing widely from each other, and acting as such a scourge to all, is yet said to be exceedingly sensitive to certain influences, which, when brought to bear against it, are said to exterminate it. Not the least of these remedies, or partial remedies (for no one has yet ventured to assert that it can always be eradicated), is that ever-useful agent, sulphur, which, though it will not in all cases succeed, does in many check the evil. But it is hopeless to think of the leaf of an annual plant like a pea being restored again after the severe measures adopted to drive away a deep-seated disease, but when the attack is but partial, and the foliage in the other portion healthy, active measures, aided by other external favourable influences, will do much to keep it under, so as to insure a crop, not so good, certainly, as when grown at a more congenial season, but as good as can be expected for the unusual period.

Considering the devastations that mildew makes on many crops, even on those favoured by all the advantages which art can bestow, it is not surprising that much should have been said about its origin, effects, and cure, and, like its compeer in destruction, the

"potato disease," such conjectures and remedies are so various as to make it matter of doubt whether another one could be invented or not; but it is only fair to observe, that amongst the many antidotes to its extermination, sulphur stands pre-eminent for its qualities in that respect. Latterly other substances have been added, as lime and soot, and some have found the compound of lime and sulphur, when mixed in equal quantities, boiled together, and the clear liquid obtained, diluted with water, syringed over the plants, the best mode of applying it. This has been done to some extent in some hop plantations that have come under our notice, and from the sanguine hopes of the parties who adopted it much may be expected. Now, though we have not yet had sufficient experience in this liquid preparation to assert its superiority over sulphur used in a powdered state, yet we are of opinion, that for all out-door crops it will be found more beneficial. The reason is obvious; the dry sulphur is in itself harmless, either to red spider, or to mildew, as it cannot be swallowed as food by the one, nor assimilated by the other, but the vapour it gives off when heated may be distasteful to both. Now this vapour has a much better chance to have effect in a house than in the open air, where they so speedily disperse with the atmosphere, and are consequently weakened to an extent to be no longer hurtful, or, at least, much less so than when shut up in a structure like a hothouse. We say, therefore, to our friends whose peas are suffering from mildew, try the application of sulphur boiled with lime, and report the result to the readers of The Cottage Gardener. The ingredients are obtained at a cheap rate, and the mode of using them equally simple, and if the result confirms our expectations, that this pest may be overcome by such means, one great step towards retarding, or even forwarding some crops, is attained; as who has not noticed *Cucumbers*, *Vegetable Marrow*, and even *Turnips* become a prey to this insidious enemy, which otherwise might have continued in bearing much longer? and when it is known the many thousands of pounds loss it is to the hop growers, we do not call attention to its importance without a just knowledge of the utility any practical remedy must be in a national point of view; at the same time we will take notice of what is being done, and report accordingly. J. Robson.

ALL THINGS ARE POSSIBLE.

By the Author of "My Flowers," "The Cottage Lamp," &c.

The age of miracles has not yet passed away. The cottage gardener, whose death was hourly expected when I wrote my last paper, is a living proof and witness that "the hand of the Lord is not shortened that he cannot save," when man's most skilful efforts come to nothing. He yet lives to show that the dead are now as mightily and sensibly raised to life as when Jesus Christ called Lazarus to "come forth."

John F—— yet lives; and never was there a more striking, astonishing proof of the mercy and goodness of God. His medical attendants saw and felt that no earthly power could save him. They did not think it improbable, but *impossible*, from the nature of his complaint, that he could live; and when it was said to them, "We trust that God may yet bless the means you have used, and raise him up again," it was most gravely and solemnly replied, "A *miracle* may restore him, but *nothing else can*."

That miracle was wrought. Without any apparent reason, without any cause that man's eye could discover, a change suddenly took place; the pains of death ceased, and life once more lighted up the languid frame. The medical man was dumb; it was no work of his he saw and felt; it was all, from first to last, the work of God. From that moment a gradual recovery has taken place; weakness is of course great; but John can now sit in his little kitchen once more; he can creep gently up his pretty garden to look at his crops and his bees; and he can speak again of his favourite woodcraft, which for a long time he could not do. He will now, I trust and hope, speak of *other* things,—things that belong unto his peace; things that grow clearer and greater when the things of earth fade and die; things that a death-bed shows and teaches, that either make the pillow smooth and soft, or fill it with thorns and anguish. He felt that all was not right when he was at the gates of death; and now that he has been "delivered from going down into the pit," surely he will seek to know the "ransom" that has been "found" for sinners! The very acts of husbandry he has so often practiced; the very circumstances of woodcraft, have been shown forth in his case. Will not their voices be heard? How often has he "digged about and dunged" the unfruitful tree! How often have I seen his axe laid to the very root of a tree, and heard my sister exclaim—"Stop, John; do not cut down that tree; we do not wish that tree touched;" and the unconscious oak or larch has gone waving on in the buoyant breeze, little recking of the stroke that would, in one moment more, have laid it low! Surely *now* these things will come home to his heart with power, and lead him to "hear and understand." At seventy, we cannot hope or look for many days; the grasshopper is beginning to be a burden; and when so violent a shake has taken place, so loud a call has been cried in our ears, we cannot say how soon the last summons may come. Yet "the heart is deceitful above all things, and desperately wicked; who can know it?" When danger is passed, the fear subsides; without conversion of heart, no *real* change takes place; no *real* alarm awakens; no *real* peace ensues. Terror is not repentance; vows are not living faith; how soon does such apparent goodness dry up like the morning dew!

I remember, some years ago, a man being suddenly struck with what was thought a fatal blow. Whether it was an accident, or an illness, I cannot now bring to mind, but it was a sudden seizure of some violent kind. He was a drinking, swearing, desperate character, and his terrors I shall never forget. With my own senses I saw and heard him, as he lay helpless on his bed. His own words were—"I see hell open before me! I see the flames; I am lost for ever, if I die now!" It was a scene for the ungodly and sinners; a terrible scene; could it ever be forgotten? Yes. That very man is living now, as careless and dead as ever! After terrors that had sprung up in his own heart; after protestations of repentance, and agonizing cries for mercy, he rose up, and "returned to his vomit."

John F—— lives in a bowery cottage, in a quiet, beautiful dell. He looks out upon green hills, which remind us all of those "from whence cometh our help." He is surrounded by gardens and fruit-trees, and woods and plantations, all crying aloud with their soft voices, and warning us to "bring forth fruits meet for repentance;" to beware of being "trees whose fruit withereth;" to seek wisdom, "which is a tree of life to them which lay hold on her;" and to remember Him who is "as an apple-tree among the trees of the wood," whose "shadow" is a "delight," and whose "fruit is sweet" to the "taste." He has already seen death, for his wife was taken from him some years ago, and he has sat in loneliness ever since; but without spiritual sight, what are all these things? Until now, his eyes were blinded; but this last visitation has, I think, quickened his sight in a measure. He may be said to "see men as trees walking;" and this is an earnest that clearer vision may yet be graciously vouchsafed to him, if he goes in simple and stedfast faith to Him who *only* can give sight to the blind. John will, probably, never again be able to wield an axe, but he may use a still more powerful weapon—"the sword of the Spirit;" he will, perhaps, never even be able to dig, and plant, and sow, as he has done hitherto; but he has a garden hidden from every eye but that of God, which needs digging and planting a thousand times more than any soil that man can till; and there he may labour without ceasing until "the night cometh when no man can work." There will be no lack of business there; and it will be a work which will follow him when the grave closes over him.

Let us all deeply reflect upon the miracle wrought upon John F——. Let us take warning, and let us take comfort too. Nothing is too hard for the Lord; "all things are

possible with God." Let us, in all our sicknesses, use the means God permits for our recovery; yet let us *in heart* seek to the Lord, and not to the physicians, for *through Him only* their hands can heal.

Let us *be ready*. When death comes, and we feel, like John, that "things are not right," we shall have but short and miserable time to set them in order. *We* may not be miraculously healed: a thousand to one against it. Let us not leave to a dying-bed that which needs our fullest health and strength to do. It is no small thing to turn to God; it is no light thing to perish.

POULTRY OF THE CALAISIS AND THE ARDRESIS.

(*Continued from page* 311.)

"The Society of Practical Agriculture of the Arrondissement of Le Havre, has lately been occupied about the destruction *versus* the preservation of crows (*des corneilles*),—a much controverted question amongst competent agriculturists. For if the crow really is a powerful assistant to the countryman in the destruction of white worms, larvæ, and noxious insects, it makes him on the other hand pay very dear for its services, by making considerable havoc amongst his young crops, and by devouring the fruits of the earth, which it digs up by means of its very strong bill. In those localities where there are no permanent lofty woods, crows are only birds of passage, and their sojourn is not long enough to occasion serious losses. In such a case it is better to preserve them, because they then do more good than harm. But in other neighbourhoods, where tall trees are numerous, and where these birds build, they are then found in such numbers, that serious injuries to agriculture are the result. (This reads more like rookeries than *croweries*.) The different opinions given on this subject have shown such a difference in the respective appreciation of the usefulness or the injuriousness of crows, that no general measure for the destruction of these creatures, otherwise than by the gun, could be proposed. Under these circumstances, the Society decided that it had the right to request of *M. le Préfet*, local authorisations for obtaining the privilege of destroying crows otherwise than by the gun, in those localities only where they are too numerous." Rather an undecided decision to come to. Is it possible that the Society is not accurately acquainted with the difference between a rook and a crow? It *may* be so; in which case they are, as too often happens, only legislating blindfold.

But a course of poultry was promised, and not a rook-pie,—however good in its way the latter may be for courageous epicures.

A notable fact to be observed throughout the Calaisis (and what is said of *it* in this respect, is applicable far beyond its limits) is the abundance of tame pigeons; for wood pigeons and turtles are to be seen in the forests. Every village, every farm, every square, street, and lane, has its pigeons running and flying to and fro, picking up every waste crumb and seed. In the towns, the attics of the houses are their usual habitations; in the country, either capacious dove-houses (*colombiers* in the form of square towers), or portions of the roomy farm-buildings. As to kinds, they are mostly utter mongrels; crosses of the Antwerp Carrier, of the Turbit, and the Runt, are often visible. Runts and Dove-house pigeons tolerably pure are not uncommon. Blue Rocks, scarce, or not at all; the mode of life here is much too domestic for them. All are very fine birds; the average of weight must be considerably above what it is in England; and when they do begin to breed, they are abundant indeed. During the pigeon season (which is here considered to be contemporaneous with that of green peas, though lasting beyond it in the autumn), a couple of excellent young pigeons can be had for twelve sous, as the regular market price, which is a fraction *less* than sixpence, seeing that the shilling English is worth twenty-*five* sous. Pigeon-pie, therefore, is not an extravagant luxury. But the price of all poultry produce is raised along the whole of the north coast of France, at least as far as Le Havre or Cherbourg, by the enormous exportation to England. In the interior, and to the south of Paris, it is much cheaper. The pigeons here cost their keepers but little; they forage far and near, and no doubt at times commit heavy depredations on the crops, while at other seasons they render good service by consuming the seeds of weeds. Although pigeons pair for life, and are tolerably faithful to each other, I think their breeding in and in is greatly checked, and their mongrelization here continued by oft-occuring accidents. The forests rear a number of the larger hawks; the need to feed their young would put them in pursuit of pigeons, which are impelled by the same instinct to scour the distant fields. In spring, many a columbine widow and widower would be made by this cause; and in autumn, in a country where every man has a right to shoot on his own land, and protect his own harvest, many a pigeon may be supposed to leave its dove-house never to get back again. The survivors are not inconsolable, and soon find a new partner, and a frequent mixture of blood is the result.

As to cocks and hens, they are equally innumerable, and equally miscellaneous. I have not seen the slightest symptom of an approach to a pigeon or a fowl fancy; perhaps the translation of some of our treatises into French might awaken the taste; at present the only competition seems to be who shall have most, who shall be, what we should call the most completely over-stocked. I can now realise the scene in a country inn, which Pigault Lebrun, a native of Calais, inserted in his earliest novel.

"The rest answered exactly to what I had just seen. Smashed window-panes, broken-legged chairs, worm-eaten tables, consumptive chickens (which ran everywhere, and left on all the furniture marks of their passage), a landlady only fit to touch with the tongs, and a landlord in special bad temper. Such was the place of amusement where we had to pass the night.

"I asked what they could give us to eat. The answer was, an excellent *fricassée* of chickens. 'Made with these?' said I, pointing to those that were trotting around us. 'Yes, Monsieur, yes,' said the governor, nipping his eye-brows, 'and you will be sure that they have not died of the pip.' I promised him very politely to pay for his chickens, and prevailed upon him to keep them. I returned to the *berline*, handed out the two ladies who were my travelling companions, and introduced them. They looked at me, and made a grimace! The wisest plan was to amuse ourselves with all this; and that was the course we took. We seated ourselves around the fire. Juliette warmed herself, Mademoiselle d'Héronville played her guitar, I dried my cloak, and the coachman brought us up from the carriage certain means of consolation which rarely fail in their effect.

"Scarcely had we begun our supper, when seven or eight chickens jumped into the dishes, pecked the bread, the pie, and even the cold meat. I believe they had not eaten anything for two days. I hunted them out, and shut the door; they returned by the cat's-hole (*la chatière*). One perched on the back of my chair, another on Juliette's shoulder; a third hooked its claws in Mademoiselle d'Héronville's hair. We got up from our seats; we ran about the chamber holding the plates in our hand, and the chickens followed us wherever we went. The coachman took an old pot, half filled it with bread and pie-crust, set it before them in one corner, they fell upon it, and left us quiet.

"In the night I was awoke by a trembling voice calling me into the room. 'What is the matter?' said I, rubbing my eyes. 'There are ghosts here.' 'And pray where are the ghosts?' 'Come here, and look then.' It was Mademoiselle d'Héronville who pointed to something at the further part of the chamber. I looked. '*Eh!* it is a pot,' said I. 'Yes, but that pot walks.' 'How walks!' '*Eh!* it certainly does walk,' and she crept close to Juliette, who slept soundly. I looked more attentively, and actually the pot was moving. 'What do you think of that?' said she. 'It is very extraordinary.' 'Ah, *mon dieu*, how frightened I am!' 'At what?' 'After all it is only a pot.' 'A pot! have you ever seen a pot walk?' 'I confess that does not commonly happen.' While we were talking, the pot visibly approached. The night-light was at the foot of the bed, and would soon be upset. I lost all patience. 'Were it the devil,' said I, 'I will know what it is.' I gave the pot a good kick. A chicken that was under it flew up to the bed, and awoke Juliette. I began to laugh. Mademoiselle

d'Héronville followed my example, and Juliette also, when she knew what had happened.

"We puzzled our brains to guess how the chicken could get under the pot. Juliette penetrated the mystery. This pot was the same one with which the coachman had fed the fowls. The chickens, jumping upon the edge of the pot, had upset it, and one of them was caught in the trap. It had seen the light through the cracks and broken places, and had tried to get rid of its covering."—*L'Enfant du Carnaval. Vol.* ii. *chap.* 7.

Cocks and hens penetrate, now as then, here, there, and everywhere. No hen is old enough or ugly enough to be destroyed. Many a hen "with a happety leg," survives some accident which has lamed her for life; but she seems to be only the more highly respected on that account. Perhaps that deference to the Scotch notion may be one cause for the overflowing superabundance of eggs. At the time and place where these words were written (May 17, 1852), eggs were, then and there, sold at the rate of 17 sous for 26. They *had been* even cheaper, namely 16 sous for 26! And all this while supplying the voracious demand of the English market, to which, however, all the towns along the coast, Dunkerque, Gravelines, Montreuil, Dieppe, &c., help to contribute. It is astonishing how I can get my omelette at such a reasonable rate.

Throughout France, eggs are sold by the hundred of 104 (or with very liberal dealers 105); the quarter of a hundred, or *quarteron*, is always 26, and the *demi-quarteron* 13, so that during the weeks that eggs were, in this market, 16 sous the *quarteron*, they were *cheaper* than three a penny. I could eat two eggs every morning for breakfast, and could get change out of a penny *for that item* of the meal! D.

(*To be continued.*)

POULTRY VARIETIES—MALAYS.

I have been much interested in reading the various descriptions, &c., of the different classes of poultry which have, from time to time, appeared in The Cottage Gardener, and shall be glad to find a continuance of articles written by able writers, who have made any particular class of poultry their fancy. It will then follow, that those who have inclination, as amateurs, to commence keeping poultry, will have some sound standard to follow in selecting stock birds for that purpose. It has seldom been my experience to meet with an amateur who was thoroughly conversant with the different points of merit in many varieties of fowls. I have found many who may, for years, have paid attention to one particular breed, and whose judgment on that particular class was undoubtedly sound, who appeared to know but little of the merits of other descriptions. If any such would, from time to time, enlighten and gratify the public with their opinions and experience on such birds as they have paid such attention to, it might prove of much value. There can be little doubt but that the breeds of poultry in this country have been much improved during the last few years, and much of this improvement must be attributed to the poultry shows which have been instituted, and carried out with so much spirit, and which have induced parties in easy circumstances to spend both time and money in rivalry with their neighbours. That this spirit is increasing, is evident from the prize sheets which are now before the public.

I observe, with pleasure, that in the Birmingham prize list for 1852, a distinct class is allotted to the different colours of Cochin-Chinas. This, I think, is likely to work well, as many first-rate birds are produced in both light and dark colours; and it has appeared to me, that if no encouragement was to be given to the breeders of good birds, unless they happened to be the fancy colour, that the stimulus to the fancy would receive a severe check. For though light buff is at present a prevailing fancy, this fancy may suddenly change, and parties who have paid great prices for stock birds of the fancy colour may be completely chagrined at finding another season that the furor is for dark or white.

The article headed "*Malay Fowls*," in No. 195, appears to me to be written by some one well versed in the points and weights of good birds of this description, and contains also good suggestions as to the improvement of other breeds from it before it becomes quite extinct. For some years I have paid considerable attention to this breed of fowls, and know that it is difficult, even now, to procure really good birds of this class (which, by-the-by, I esteem fully as good as their more favoured neighbours, the Cochins); and I should have been glad to have seen something more of a spirit to recover and improve the breed, rather than let it die out for want of encouragement.

It has been considered, at the two last shows at Birmingham, that the birds in this class were deficient in merit; and I would suggest, would not attention to their improvement have been more likely to have been drawn by the offer of premiums at least equal to the Spanish and Cochins? That they have points of real merit, I think no one will dispute who has had opportunity of cutting them up, and knowing at the same time the ages of the fowls so disposed of. Last year I raised a number of them, and at six to eight months old killed most of the young cocks for the table, and found them weighing from seven to nine pounds each. This is no mean weight, and the quality was quite on a par with any ordinary fowl. They are birds that are easily kept within circumscribed limits—mine rarely attempt to fly over a wall three feet high. They attain a great weight in a short time, lay a rich egg, have strong constitutions. They are noble-looking birds, and will repay those whose fancy leads them to give them a trial. Let us not quietly see good stock like this sink into oblivion, but let such of your readers who have any doubt of their merits give them one trial, and judge for themselves.—One in the Ring.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of The Cottage Gardener. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

X. Y. Z.—We have two letters lying at our office directed for "X. Y. Z.;" if the party for whom they are intended will send us a ready-directed and *stamped* envelope, we will enclose them in it, and post them.

Secretary of the Liverpool Poultry Show.—In answer to many queries for the name of this gentleman, we reply, it is Mr. H. White, Warrington; but we confess we think that the society of which he is the very efficient official, and, indeed, all similar societies, would do no more than justice to us, as well as to themselves, by advertising their meetings, with the particulars desired by intending exhibitors.

Alpine Strawberry (*J. B. H.*).—If you mean the white variety, we can testify that it is *not* lost, for we have it in our own garden. Can any reader tell where "the true Chinese breed of pigs is to be purchased?"

Taking Honey.—"*Rusticus*" seeks "information as to the best means of taking honey, without destroying the bees, from a swarm of this year, treated originally according to the plan advocated by a 'Country Curate,'" in which instance "the comb is well filled, and the hive has thriven well; the swarm having been much enlarged by following the plan of removing the old stock, and putting the swarm in its place." And your correspondent further asks—"Will common driving answer, or if not, what is the best plan?" Fumigating with *puff-ball*, or any other narcotic, I do *not*, under any circumstances, recommend, where *clean honeycomb* is a desideratum. Indeed, I am as averse as ever to fumigation at all where it can be avoided. Though I often have occasion to adopt it, and find it useful in experiments, it has generally proved to me a filthy, unsatisfactory process in itself. If bees are to be saved, therefore, I still continue to patronise *driving*, though I cannot ensure its universal success. Yet I have never found it fail *ultimately* where the hive is strong in bees and full of comb. In *very heavy* hives, however, a new difficulty presents itself; the comb may become disengaged, and a smash ensue. Nothing but extreme care will prevent this. It would not answer as "Rusticus" suggests, to remove the swarm away, and put the old stock in its place, which is close by, because only the *older* and useless bees would leave the swarm, besides which, I imagine there would be much fighting. If the bees *must* be saved, either fumigation or driving must be had recourse to. But I have lately come to the conclusion, I think, that the brimstone-pit is, after all, the most profitable, as certainly it is the least troublesome method, and as little cruel a way as any of managing spoliation-stocks in autumn. It is the most "profitable," because I believe that but a *very small* proportion of the *full-grown* bees which are added to a stock in August survive till February, while they will certainly consume much honey. I am now, therefore, only careful to save the *ceiled brood-comb*, of which large quantities, "*spes gregis*" (the hope of the *swarm*), are found in all good stocks in early autumn. It is the issue of this brood upon which depends the prosperity of every stock another year. For the best way of doing this, see the "*English Bee-keeper*" (Rivington's), pages 64 and 102. If, however, a stock intended for preservation is weak in bees in autumn, then the addition of any full-grown bees is of course advantageous, as tending to induce the queen to lay at once with renewed vigour. Let your correspondent, if he still is bent on saving *all* his bees, try what driving

the bees of the swarm up into the old stock will do; then he may put the old stock, which he says is "very heavy," about half-way between the two stands. We should be glad to know the result. *Query?* Has any body seen any bees at work upon the honey dew this year?—A Country Curate."

Cheap Pine-culture (*Essex Farmer*).—You will see an article by Mr. Errington which helps to meet your case. Pines are grown from suckers, crowns, &c., and only from seed by the curious. Gardeners' wages—good ones—vary from £60 to £100 per annum. You would do well to buy "Hamilton on the Pine-apple;" his system possesses a greater degree of simplicity than any other. You will find further accounts of pine-culture before long.

Gapes in Poultry.—*M. R.* writes as follows:—"As the rearing of poultry is now so much thought of, it is of some consequence that the cause of the increasing complaint among young chicken, commonly called 'the gapes,' of which so many broods die, should be ascertained. I have taken great delight in rearing poultry; but for the last ten years I have lost the greatest part of my broods from this complaint. On examining the dead chicken I find the wind-pipe filled with worms. The only remedy I have discovered is tobacco-smoke; but this is very troublesome, for it requires to be used sometimes twice in the day, and to be used nearly every day for two or three weeks. I am now convinced that these worms are in the water; for a few days ago, one of my chicken fell into a well, and on being taken out (dead, of course,) I observed several of the same sort of worm adhering to the feathers. I would, therefore, suggest to some of your readers who are fond of their poultry, and where this disease is prevalent, whether *boiling* the water that is given to the very young chicken would be a preventive. I would try the experiment myself, but am now a great invalid, and I could not depend on servants taking the trouble." Mr. Yarrell being applied to on the subject, replies:—"The intestinal worms called *Filaria*, from their thread-like form, I have never seen in the wind-pipe of any bird. The worms which occasionally infest the trachea, and are so destructive in chickens and young pheasants, producing the disease called the 'gapes,' are flattened, fluke or flounder-like, and are called *Fasciola*. But what, in the present instance, may be more to the purpose, is to state that the best mode of curing the gapes in chickens and young pheasants, is to be found in the Supplement to 'Montagu's Ornithological Dictionary,' under the article '*Pheasant*,' part of which I have used in the 'British Birds,' under the same head. The *Fasciola*, lodging in the trachea, adheres by a kind of sucker to its internal membrane, and causes death by suffocation from the inflamed state of the part. The receipt alluded to by Mr. Yarrell is fumigation by tabacco, 'found to be an infallible specific when administered with due care.' The young birds are put into a wooden box, into which the fumes of tobacco are blown by means of a common tobacco-pipe. Any state short of suffocation by the remedy, is found to be a cure for the complaint."—J. O. W.—We do not think, as suggested by *M. R.*, that the worms in the windpipe of the fowl are taken into its beak with the water, any more than that the Ascarides, so irritating to children, are swallowed with the uncooked fruit they eat. Bad water and raw fruit cause an unhealthy state of the body; and wherever there is want of health or vigour in the animal frame there parasitical vermin are most likely to occur. Mr. Yarrell states that the worm causing the gapes is *Fasciola;* another authority states that it is *Syngamus trachealis*, or *Distoma lineare;* and we are much mistaken if we have not observed in the windpipe of the fowl so diseased the *Strongylus papillosus*. May there not be different species, any one of which would cause the irritation in the windpipe which causes the symptoms? At all events, we are sure that tobacco-smoke is the only known effectual remedy, and that high feeding is the best preventive.

Poultry and Poultry Showing.—*Semper Vigilans* says, "The question daily becomes more difficult how to say correctly which are true Cochin Chinas, or Spanish, or Dorking; whether combs are single or double, and such like. Now, to put the whole question upon its proper footing requires the establishment of rules for all descriptions of fowl or animals shown, and that these be printed and sold to any one upon application, declaring such to be the judges' criterion they are bound to follow. In order more correctly to come to some general opinion upon these points, let every one give their views of what constitutes perfection in every class of fowl they chance to know, marking out the most leading points in in rank; for instance, 1, *size;* 2, *form;* 3, *colour;* 4, *comb* (single or double); and so on. Is it not possible, by addressing societies now in existence, your subscribers, and the public in general, for their views, some plan might not be found of selecting from the greatest number who nearest agree, what might be adopted by all societies, and so enable exhibitors, amateurs, and the public, to know upon what grounds they proceed? At present we are quite in the dark." We think it not only possible to attain such fixed rules, but what we have done, and are now doing, will attain them. Our pages are open to statements from any one of what they consider the most desirable and most important characteristics of any variety of poultry.

Spanish *versus* Cochins (*A Novice*).—We quite agree with you that the statements made by *Gallus* are not conclusive that the Spanish is a more profitable variety than the Cochin China; nor will the question be set at rest, until, in two adjoining yards, under precisely the same advantages of warmth, feeding, &c., an equal number of equal aged birds have been tried against each other, and a regular debtor and creditor account kept. At the same time, *Gallus* is no small authority. We know he has some of the best Cochins in England, and his Spanish fowls have carried off many prizes.

Lycopodiums and Ferns (*Lycopodium*).—You will see what you require in Mr. Appleby's communication to-day. The following is an alphabetical list of the genera of *Ferns*. Some of them are omitted in *The Cottage Gardeners' Dictionary* because not meriting cultivation:—Acrostichum; Allosorus; Asplenium; Allantodia; Antrophyum; Adiantum; Alsophila; Aspidium; Aneimia; Blechnum; Balantium; Botrychium; Ceterach; Cænopteris; Cheilanthes; Cibotium; Cyathea; Doodia; Diplazium; Davallia; Dicksonia; Ellobocarpus; Gymnogramma; Gleichenia; Hemionitis; Hymenophyllum; Lomaria; Lonchitis; Lindsæa; Lygodium; Meniscium; Nothoclæna; Niphobolus; Onoclea; Osmunda; Ophioglossum; Polybotrya; Polypodium; Parkeria; Pteris; Pleopeltis; Struthiopteris; Scolopendrum; Schizæa; Tænitis; Trichomanes; Todea; Vittaria; Woodwardia; Woodsia; Xiphopteris. To these might be added Danæa and Marattia, for they closely resemble the Ferns, and require similar treatment.

Sowing Roses (*A. A. A.*).—You will have seen what you require in our last number.

Melon Pit (*W. B.*).—Hartley's rough plate-glass will answer well for this.

Homœopathy (*A Constant Reader*).—We cannot insert testimonies either in favour or discredit of this system.

Seedling Lent Figs (*T. M. W.*).—These may remain in the seed-pot until spring, when they may be potted off into single pots, but should they appear to be pinched up for room in the pot you have them in, place them in a larger pot at once, and let them remain out-of-doors until frost sets in, from which they should have protection in a greenhouse or frame. More about your *Ornithogalum* shortly.

Cape Jasmine (*F. M.*).—You will find full directions for this under *Gardenia*, in late numbers. Keep your plant growing freely after flowering; let it have more air to harden the buds before the end of Autumn; keep it cooler and drier during winter, and then start it into growth and bloom in extra heat in spring. Nothing suits it so well then as being plunged in sweet fermenting material. You have erred in keeping your plant dry at this season, unless you wished to bloom it in autumn or early winter. Average temperature; spring, starting it into bloom, 55° to 65°; in bloom, 45° to 50°; growing in summer, 60° to 75°; resting in autumn, 50° to 60°; winter and dry, 40° to 48°. Water most freely in the highest temperature.

Rhododendron Leaves in a Pit (*P. S. H.*).—These turning brown at the edges is no more than the old leaves frequently do, on the same principle that the leaves of the oak fall in autumn. If the young leaves do so from the fresh growth after flowering, there must be something wrong at the roots. A deficiency of water, or the branches have been exposed to too much heat and light. See an article by Mr. Fish to-day.

Bees (*A Recent Subscriber*).—You may buy them now, taking care to select one that was a swarm of this year, and not less than twenty pounds in weight. Or you may wait until next spring, have the hive you prefer ready, and get a first swarm hived into it. As your object is to instruct your neighbours in the depriving system, buy Payne's *Bee-keeper's Guide*, and "*A Country Curate's*" *English Bee-keeper*. The first is published by Messrs. Groombridge, and the second by Messrs. Rivington. In the country, ten shillings is the price of a hive of bees.

Morning Side Practical Gardeners' Society.—We are sorry that we cannot insert the report of the meeting. We have to provide for readers generally, and they would not be amused or instructed by a list of local prize-winners.

Names of Plants (*J. Kirkite*).—Your plant from Black Gang Chine is *Epilobium parviflorum*. (*H.*).—Yours is *Arenaria peploides*. (*J. S. B.*).—No. 1. *Solanum dulcamara*. No. 2. *Bryonia dioica*. The leaves of the first are hastate; of the second palmate. The leaves of the vine, and all other leaves that have a footstalk are petiolate.

Weather at Thetford (Norfolk) in 1851.—

	Barometer	Thermometer	Rain	Prevailing Winds
January	29.87	43.	1.66	S. W.
February	30.	41.50	0.57	S. W.
March	30.02½	44.	2.83	S. W.
April	30.02½	51.	1.96	N. W.
May	29.80	56.50	0.85	N. W.
June	30.25	66.50	1.17	S. W.
July	29.96½	65.50	3.15	S. W.
August	30.25	65.	1.81	S. W.
September	30.23¾	56.50	0.68	N.
October	30.	53.	2.08	S. W.
November	30.10	38.50	1.45	N. W.
December	30.25	44.	0.60	S. W

Sollya heterophylla (*Turquoise*).—This is the name of your plant; that is, the various-leaved Sollya. If you put six or eight cuttings round the side of a six-inch pot, in the spring, when the hotbeds are at work, you cannot fail to root them. Use for soil peat and loam, half-and-half, with a little sand. It must look very pretty on your wall (at Devonport) without any protection.

Various (*Rev. R. M. E.*).—The purple flower is the *Lythrum alatum*, a greenhouse perennial, which may be kept in a frame with a little attention. We do not know what the Gladiolus is if it is not *G. floribundus;* but that it is we have not much doubt. *Gazania ringens* will require protection as well as the *Lythrum alatum*.

Phlox decussata (*M. J. D.*).—This is one of the tall-growing, dark-flowered varieties; rising from three to four feet high; but the height of hardy plants entirely depends upon the soil and situation where the plant may be growing. *Decussata* is so called from its four-ranked manner of growth; the leaves point out from the stem; but this may be said of all the Phloxes, but in particular of all the tall varieties. The name of your plant is *Manulea pedunculata*.

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WEEKLY CALENDAR.

M D	W D	AUGUST 26—SEPTEMBER 1, 1852.	Weather near London in 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
26	Th	Prince Albert born, 1819.	30.104—29.887	64—55	S.W.	11	5 a. 5	57 a. 6	0 58	11	1 32	239
27	F	Lady's Tresses flowers.	29.993—29.889	68—52	S.W.	1.32	7	56	2 4	12	1 15	240
28	S		29.739—29.669	64—44	N.W.	—	8	54	3 14	13	0 58	241
29	Sun	12 Sunday after Trinity.	29.902—29.707	59—45	N.	07	10	52	rises.	☺	0 40	242
30	M	Althæa frutex flowers.	30.180—30.024	63—35	N.	—	11	50	7 a 42	15	0 22	243
31	Tu	Willow red-under-wing Moth seen.	30.240—30.178	68—51	W.	—	13	47	7 59	16	0 3	244
1	W	European Thick-knee clamours.	30.219—30.136	76—58	S.W.	10	15	44	8 a 15	17	0 16	245

Meteorology of the Week.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 71.7° and 49.6° respectively. The greatest heat, 85°, occurred on the 1st in 1843; and the lowest cold, 32°, on the 29th in 1850. During the period 106 days were fine, and on 69 rain fell.

NEW PLANTS.

Allied Spærostema (*Sphærostema propinqua*).—This is a curious, half-climbing, woody plant, a native of Nepaul, whence it was sent to England, as far back as 1828, by Dr. Wallick. It flowered in 1851, at Kew, and is figured and described in the *Botanical Magazine*, t. 4614. The genus was founded by Blume, and is derived from *sphaira*, a globe, and *stema*, a stamen. The flowers are yellow, unisexual, the male, or stamens, being produced in one flower, and the pistil, or female, in another. The stamens are collected together in clusters, forming a globe-like body, whence the name. The fruit is a red berry, tasteless, and produced like currants, on long receptacles. It belongs to a small order of plants, little known in this country, called *Kadsurads* (Schizandraceæ), after *Kadsura japonica*, another half-climbing plant like the present, not uncommon in British gardens. The structure of the wood of this plant has often been remarked as very curious, being destitute of the usual annual rings. It is the *Kadsura propinqua* of Dr. Wallick. It was observed by Dr. Hooker, in the Sikkim Himalaya, at an elevation of 9,000 feet. The flowers are fragrant, and the shrub, as a whole, handsome. The natives eat the berries. *Leaves* pointed, egg-shaped, on short foot-stalks, slightly toothed at the edge, milky green below, alternate. *Male flowers* have nine sepals arranged in threes, pale yellow, and like a corolla; anthers twelve to sixteen in number, without any filament. *Female flowers* composed of sepals like those of the male; style none.—J. B.

Culture and Propagation.—This has been hitherto considered as a warm greenhouse plant, but I am almost sure that is a mistake, and it is nearly hardy; at least, as hardy as *Kadsura japonica*, which stood out with me for several hard winters without injury. From Nepaul it extends to the Sikkim Himalayahs, and we have hardy plants from the same range where this was found. It grows well against a trellis. The Kadsurads all strike very readily from cuttings, and will grow in any good garden soil. D. Beaton.

The hope we expressed that a recurrence of fine dry weather at the commencement of August would be vouchsafed, has not been realized. On the contrary, we speak of the south of England, there has been a series of wet mild days—weather the most conducive to the occurrence of the potato murrain, and evidence accumulates that it is very prevalent, *but not to the extent interested parties represent.* Letters pour in upon us, some stating that it prevails alike in the late and in the early-planted, and others even bring forward evidence to prove that the late-planted are most free from disease. We will print one of these testimonies from a trustworthy correspondent, and then add our commentary. His letter is dated August 14th, and is as follows:—

"I think there is no point more strongly maintained in your publication than the advantage of planting potatoes very early; and feeling great respect for the opinions of your writers, who are generally professional men, I determined to do as they advised. I always plant a few early potatoes in my garden, and my main crop in one of my farmer's fields, who never objects to the room I occupy, provided I clean and manure the land. My gardener did what I recommended at once; but when I told the farmer I wished to plant my potatoes in February, or, at the latest, in March, and said what The Cottage Gardener had written, he laughed, and said 'He knew better than any of them.' He added that 'Them men who writes in books about such things, don't know half so well as we farmers, that have to pay rents and live by our farms, and I knows that the potatoes planted early is not half so good as them that is put in late.' Well, by a little perseverance, I persuaded him to let me plant my potatoes in March, while he delayed putting in his until May. Mine, of course, were much forwarder in growth than his; but I did not find that they ripened much sooner. At last, the time came in autumn when they were all to be taken out of the ground, and conceive my surprise when I tell you that his were far better

than mine,—more in number, larger in size, and less diseased. [Were they not different varieties?] Now, then, I had not a word to say to the farmer; but I still thought I would follow your advice in my garden, and this year I planted my Ash-leaved Kidnies and Forty-folds (this last, in my opinion, being by far the best potato) rather early; and about a month afterwards, seeing a space at the end of my potato-bed wide enough to receive another row, I desired my gardener to put one in. He did so; and this morning we took up all that remained after our summer's consumption. Now, then, read again the result. All my potatoes are in some degree diseased, but those that were planted a month later than the others, are far the best, being more in number, larger in size, and not one quarter so many diseased. [Were they the same varieties?] Something may be said in regard to the part of the country where the potatoes are grown, for what may be well in the south may be injurious in the north, and, perhaps, every farmer knows best what is proper for his particular situation; but allow me to make a remark that applies generally. The disease is still a mystery, and the cure is still to be discovered; but we find the potato is never attacked till after it has remained a certain time in the ground. Now, may it not be advantageous to curtail that time as much as possible, and not to put the seed into the ground a day before it is absolutely necessary to give it time to ripen? By doing so, you avoid the spring frosts, and give the disease less time and opportunity to mature itself and make the attack.—J. C——n."*

Now, the simple answer to our correspondent is—Whoever grows a variety of potato that is not ripe until autumn, or even until mid-August, will never escape from liability to extensive loss by the murrain. We this year grew four varieties—*Walnut-leaved Kidnies*, planted in February, and taken up in the middle of July without a diseased tuber; *Ash-leaved Kidnies*, planted in November, and taken up in the middle of July with not more than one tuber in fifty diseased; a new *Shropshire variety*, and *Martin's Seedling*, planted in November, and now (August 17th) only fit to take up, and full one-sixteenth of the first, and about one-twenty-fourth of the second, rendered useless by the murrain. We were persuaded to grow the two last kinds because very productive. If the sets are kept sound, unshrivelled, and the sprouts uninjured, we do not care much whether they are planted in February or November; but we consider it essential that the variety should be ready for storing, that is, that its tubers should be perfected before July is ended.

Then, again, we have wearied ourselves, and we fear our readers, in warning all potato planters against manuring for this crop. Now our correspondent seems to have been compelled to neglect this rule, for he says his tenant farmers do not object to let him have plots for the culture of potatoes, "provided he cleans and *manures* the land." Now all evidence goes to establish the fact that manured potatoes are more frequently and more extensively diseased than those grown on land unmanured for them. This testimony is not borne by British cultivators only, but the chorus is increased from the Continent. "In a few parts only of Germany, especially in Thuringia," says Dr. Schleiden, "a custom has been pretty well established not to plant potatoes in fresh manure, but as the third or fourth crop, and generally after clover, and these parts are precisely those which remained the longest free from disease, and which suffered the least."—*Journ. Hort. Society*, vii. 190.

One of the reasons why manure is injurious to potatoes seems to be, that it keeps them longer in a growing state; and another reason seems to be, that it supplies them with an excess of phosphates of lime and magnesia, which phosphates are found to be excessive in the murrained potatoes.

Our correspondent is quite right in his inference that it is "advantageous to curtail the time as much as possible" that the potato is in the ground; but the time to be curtailed, by every effort, is the time that the *growing* tubers are in the ground, not the time that the sets are so situated. It is to shorten that time—to have the growing tubers in the soil during the months of May, June, and July only—that we recommend early planting, early ripening varieties, and no earthing-up; for late planting, and earthing-up, delay the period of the tubers ripening.

We entirely agree with our correspondent that the nature of the disease is a mystery. The facts that the tubers on seedling plants, and that diseased and sound tubers occur on the same plant, set at defiance most of the theories which have been suggested; and there are other facts which are similarly incompatible with other speculative explanations. It may be that the murrain, as Dr. Schleiden suggests, is independent of temporary causes, and will never disappear. It may be that the potato, like other plant-varieties created by culture, has reached the period when permanent decline is established. All these are but "may bes," and it is consolatory to know that every one of them is counterbalanced by its parallel "may not be."

It is more useful just now, in the imperfect state of our knowledge of the disease, to keep our attention fixed on modes of escape from its attack, rather than on speculations as to its nature, or remedies in case of its appearance. Now, there is no one denies that there are two precautions, which, if adopted, are certain to preserve the crop from serious loss. They are these:—

1. *Grow a variety that is ready for storing in July, and the earlier in that month the better.*

2. *Grow it in a light, unmanured soil.*

Let no one neglect those rules, and we recommend these as the results of our own experience:—3. Keep the sets in dry sand, or ashes, in a cool, dry place, until wanted. 4. Plant early—not later than the end of February. We plant in November. 5. Plant whole tubers, and each about two-and-a-half ounces in weight. 6. Do not earth-up the stems, but, when some of the tubers appear above the surface, merely draw around the stems about an inch in depth of earth.

* To show how testimony varies, we give the following from the pen of our correspondent, "Upwards and Onwards." "Every year, since the murrain appeared, my potatoes have been affected with it more or less, though they are not so to near the extent this season as usual, owing, I am bound to believe, from their having been planted last November. This autumn-planting system I was very *wary* of adopting, and tried it three years; the result proved to me it was good: so this year, the whole of my crop, with the exception of the early Ash-leaved Kidneys, is thus planted, much to my satisfaction. I intend to continue it for the future, as I strongly recommend it."

FORSYTH MSS.

William Paterson was a native of Scotland, and probably of Montrose. His parents seem to have been

in humble life, for when he had attained to affluence, and writing to Mr. Forsyth when about to return from India, in 1784, he says, "One hundred pounds must be kept ready to defray my expenses down to Scotland, where I must go and see the old people very soon after my arrival. Pray write them a comfortable letter, and tell them I am well, though, by-the-by, I am not."

Of Mr. Paterson's early career we have been unable to obtain any information, and the first letter among these MSS. is dated from Saldanah Bay, a little to the westward of the Cape of Good Hope, in the June of 1781. He was then in the fleet commanded by Admiral Hughes, and serving as a military volunteer with the troops on board. "From the Cape," he says, "our destination is to the East Indies, and it is expected it will be Madras. I expect a commission by the time we arrive, and after we are settled you may expect a part of everything that I can collect, and, believe me, I never shall forget your past kindness." One expectation was realized, for before the close of the year he became an ensign in the 98th Regiment, but getting into the S.E. monsoon, the fleet, instead of sailing to Madras, was driven up to Bombay, touching previously at the Island of Johanna, and Morabat Bay, on the coast of Arabia. Writing on the 5th of December, 1781, to Mr. Forsyth, he says:—

On the 2nd of September we arrived at Johanna Island; we were, at that time, at 1½ pint of water per day, and that we distilled from the sea. Between St. Jago and that place we lost about 54 men, who all died in the scurvy; and most of the men were landed sick. You will excuse my not giving any particular account of that island, as there is a very great uncertainty of your receiving this, as it comes by a ship which is obliged to leave the fleet, owing to her bad sailing. I shall only tell you that, during our stay, I examined great part of Johanna, where I found great numbers of very curious plants, many of which I am certain are new; and you may expect some seeds and specimens by the first fleet that sails from Bombay.

From Johanna we have had a very tedious passage, and on the 24th of November we arrived at Morabat Bay, on the coast of Arabia Felix, which is the most barren country I ever beheld. I have been several excursions up the country, and only found one species of Aloe, and some Mimosas, which were growing on the naked rocks.

We met with very little supply at this place—only a few goats, which they feed with fish. The town of Morabat contains about 500 inhabitants, and are much oppressed by what they call the Biduc Arabs, or wandering Arabs, who come down from the mountains and attack them; they are armed with lances and matchlocks. Of all these places I shall give you a full account when we arrive at Bombay.

I am now gone out of the Royal Charlotte, and am now on board the Isis, man-of-war, where we proceed on to Bombay as fast as possible. The rest of the ships remain here for some time; the three men-of-war and two transports go on with the 98th regiment, and the 100th regiment and additional companies are left with the remainder of the ships. I am in the same ship with the colonel, and am ensign in his company. I am sorry to acquaint you that we have lost, in the fleet, 18 officers, and about 600 soldiers, and at present great numbers sick. As for my own part, thank God, I never enjoyed better health than I have done ever since I left England.

A notice by him of an electrical fish, which he discovered at the Island of Johanna, was published in 1786, in the 76th volume of the Philosophical Transactions.

GOSSIP.

It is with very great regret that we have to announce that *Mr. J. A. Downing*, of New York, whose work on Landscape Gardening we have more than once mentioned with approbation, was one of the many passengers who perished by the burning of the Henry Clay steam vessel on the waters of the Hudson River. How varied —how eloquent of human short-sightedness—are the thoughts now suggested by his praises of that mighty stream. Never does he mention it without some expression of admiration, yet within three short years it has become his grave.

That new and beautiful climber *Raphistemma pulchella* is now finely flowering in the orchid house at Messrs. Weeks and Co., King's Road, Chelsea. The flowers are produced in bunches, like the *Stephanotis floribunda*, but is larger, a more profuse bloomer, and sweet-scented. At first it is of a whitish rosy hue, afterwards turning to a rich lemon colour. It is a most rapid grower; a small plant shifted into a small pit covered nearly one hundred feet of wire trellis in about five months. Altogether the foliage and flowers make a splendid appearance. This is a most desirable, useful plant, and is invaluable for ladies' bouquets.

The same nurserymen have *a new Hybrid Pea*, which can be used in various ways. When young, cut up like a French bean; further advanced, the peas can be shelled out and boiled as other peas; or the pods and peas boiled together. Either way, we are told, they are most delicious. This variety grows to the height of four feet, has very slender haulm, is highly ornamental both in growth and flower, and a most abundant bearer.

We hope and expect to see the time when *Crystal Palaces* will be erected near most of our large towns. One, the funds to be raised in five pound shares, is proposed at Bath; another at Liverpool; and Mr. Thomas Woollcombe, the Chairman of the South Devon Railway Company, has brought forward a grand scheme for public gardens for the combined towns of Plymouth, Devonport, and Stonehouse, with their 120,000 or 130,000 inhabitants. It embraces gardens to the extent of from twenty-five to thirty acres, and the erection of a crystal palace covering an acre of ground. The cost of laying out, and the crystal palace, is estimated at £25,000, of which Sir Joseph Paxton is of opinion the crystal palace would cost about £12,000. The present notion is to raise the money by debentures.

The *Gardens of Elvaston Castle* can only be seen on Fridays, between ten and two o'clock. Parties applying on other days, and at other hours, will be henceforth invariably refused admittance. The house is never allowed to be seen, and no eatables are permitted to be taken within the park or grounds. This notice is inserted to prevent parties from giving themselves the trouble of going on other days, as under no pretext whatever can they be admitted. After two o'clock on Fridays no one is allowed to enter.

We have long had before us for notice one of the most interesting books of the season, and to-day we will

begin by extracting from it a notice of *the Hong-Kong gardens.* The volume we thus praise and quote is Mr. Fortune's *Visit to the Tea Districts of China and India.*

"I have always thought that, although various causes may operate to render Hong-Kong unhealthy, yet one of the principal reasons is the absence of trees and of the shade which they afford. In a communication which I had the honour of making to the Government here, in 1844, I pointed out this circumstance, and strongly recommended them to preserve the wood then growing upon the island from the Chinese, who were in the habit of cutting it down annually, and at the same time to plant extensively, particularly on the sides of the roads and on the lower hills. I am happy to say that these recommendations have been carried out to a certain extent, although not so fully as I had wished. It is well known that a healthy vegetation, such as shrubs and trees, decomposes the carbonic acid of the atmosphere, and renders it fit for respiration; besides which there is a softness and coolness about trees, particularly in a hot climate, that is always agreeable.

"Many of the inhabitants have taken up the matter with great spirit, and have planted all the ground near their houses. Some of them have really beautiful gardens. I may instance those of His Excellency the Governor, at "Spring Gardens;" of Messrs. Dent and Co., at "Green Bank;" and of Messrs. Jardine and Matheson, at "East Point." In order to give some idea of a Hong-Kong garden I shall attempt to describe Messrs. Dent's, which was then in the possession and under the fostering care of Mr. Braine:—

"This garden is situated on the sloping sides of a valley, near the bottom of one of the numerous ravines which are seen on the sides of the Hong-Kong hills. It is near the centre of the new town of Victoria, and is one of its greatest ornaments. On one side nothing is seen but rugged mountains and barren hills, but here the eye rests upon a rich and luxuriant vegetation, the beauty of which is greatly enhanced by the contrast.

"Every one interested in Chinese plants has heard of the garden of the late Mr. Beale, at Macao, a friend of Mr. Reeves, and like him an ardent botanical collector. Nearly the whole of the English residents left Macao and went to Hong-Kong when that Island was ceded to England, and all the plants in Mr. Beale's garden which could be moved with safety were brought over in 1845, and planted in the garden at "Green Bank."

"On entering the garden at its lower side there is a wide chunamed walk, leading in a winding manner up the side of the hill, in the direction of the house. On each side of this walk are arranged the trees and shrubs indigenous to the country, as well as many of the fruits, all of which grow most luxuriantly. *Ficus nitida*, the Chinese banyan, grows on the right-hand side, and promises soon to form a beautiful tree. This is one of the most valuable trees for ornamental purposes met with in the south of China; it grows rapidly, with but little care, its foliage is of a glossy green colour, and it soon affords an agreeable shade from the fierce rays of the sun, which renders it peculiarly valuable in a place like Hong-Kong. The India-rubber tree (*Ficus elastica*) also succeeds well in the same part of the garden, but it grows much slower than the species just noticed. On the other side of the main walk I observed several specimens of the Indian "neem" tree (Melia Azedarach), which grows with great vigour, but is rather liable to have its branches broken by high winds, owing to the brittle nature of the wood. This defect renders it of less value than it would otherwise be, particularly in a place so liable to high winds and typhoons. This same Melia seems to be found all round the world in tropical and temperate latitudes; I believe it exists in South America, and I have seen it in Gibraltar, Malta, Egypt, Aden, Ceylon, the Straits, and in the south and north of China, at least as far north as the 31st degree of north latitude. Amongst other plants worthy of notice in this part of the garden are the Chinese cinnamon, the pretty *Aglaia odorata*, and *Murraya exotica*, both of which are very sweet scented, and much cultivated by the Chinese. Two specimens of the cocoa-nut palm imported from the Straits are promising well. Other fruits—such as the loquat (*Eriobotrya Japonica*), the Chinese gooseberry (*Averrhoa Carambola*), the wangpee (*Cookio punctata*), and the longan and leechee—are all succeeding as well as could be expected, considering the short time they have been planted. The *Pinus sinensis*, which is met with on the sides of every barren hill, both in the south and north of China, and which is generally badly used by the natives, who lop off its under branches for fuel, is here growing as it ought to do. The Chinese have been prevented, not without some difficulty, from cutting off the under branches, and the tree now shows itself in its natural beauty. It does not seem to grow large, but in a young state, with its fine green foliage reaching to the ground, it is not unhandsome.

"As the main walk approaches the terrace on which the house stands, it turns to the right, between two rows of beautiful yellow bamboos. This species of bamboo is a very striking one, and well worthy of attention in England; the stems are straight, of a fine yellow colour, and beautifully striped with green, as if done by the hand of a first-rate artist. I sent a plant of it to the Horticultural Society in 1844.

"At the bottom of the terrace on which the house stands there is a long narrow bamboo avenue, which is called the "Orchid Walk." This always affords a cool retreat, even at mid-day, as the rays of the sun can only partially reach it, and then they are cooled by the dense foliage. Here are cultivated many of the Chinese orchids, and other plants which require shade; amomg them I observed *Phaius grandifolius*, *Cymbidium sinense* and *aloifolium*, *Aerides odoratum*, *Vanda multiflora* and *teretifolia*, *Renanthera coccinea*, *Fernandezia ensifolia*, *Arundina sinensis*, *Habenaria Susannæ*, a species of *Cypripedium*, and *Spathoglottis Fortuni*. There are also some other plants, such as *Chirita sinensis*, the "man-neen-chung" (a dwarf species of *Lycopodium*, highly prized by the Chinese), and various other things, which, taken altogether, render this shaded "Orchid Walk" a spot of much interest.

"Above the "Orchid Walk" is a green sloping bank, on which are growing some fine specimens of bamboos, *Poinciana pulcherrima*, myrtles, *Gardenias*, oleanders (which thrive admirably in China), *Croton variegatum* and *pictum*, *Magnolia fuscata*, *Olea fragrans*, *Dracæna ferrea*, and *Buddlea Lindleyana*. The latter was brought down from Chusan by me in 1844, and is now common in several gardens on the island, where it thrives well, and is almost always in bloom, although the flower-spikes are not so fine as they are in a colder climate. A large collection of plants in pots are arranged on each side of the broad terrace in front of the mansion. These consist of camellias, azaleas, roses, and such plants as are seen in the Fa-tee gardens at Canton; many of the pots are prettily painted in the Chinese style, and placed upon porcelain stands."

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

Aberdeenshire, Sept. 17. (*Sec.* G. Reid.)
Allendale, Sept. 11th. (*Secs.*, G. Dickinson and G. J. French.)
Bath, Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)
Bridgewater, Sept. 22. (*Secs.*, Mr. J. Leaker and Mr. J. Hayward.)
Brigg, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
Bury St. Edmunds, Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
Caledonian (Inverleith Row), Edinburgh, Sept. 2, Dec. 2.
Cheltenham, Aug. 26.
Chepstow, Sept. 14. (*Sec.* J. F. Hartland.)
Clapham, Sept. 11.
Colchester and East Essex, Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
Coventry and Warwickshire, Aug. 31st. (*Sec.* Dr. Phillips.)
Dumfries and Galloway, Sept. 9th. (*Sec.* Mr. W. G. Johnstone.)

Durham, Sept. 8.
Forfarshire (Eastern), Sept. 15 (Arbroath).
Glasgow, Sept. 10.
Hampshire, Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
Hexham, Sept. 15, 16.
Hull, Sept. 16.
Kirkcaldy (Fifeshire), Sept. 9.
Lincoln, Sept. 14.
Liverpool, Sept. 2 (Botanic Garden).
London Floricultural (Exeter Hall, Strand), Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
Maidstone. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
Mid Calder (Parish school-room), Sept. 10.
Newbury, Sept. 3.
North London, Nov. 23, Chrysanthemum.
Northampton, Sept. 27, Dahlia.
Oxfordshire (Royal), Sept. 23. (*Secs.*, C. Tawney and W. Undershell, Esqrs.)
Peebleshire, Sept. 14th. (*Sec.*, J. Stirling.)
Ponteland (Newcastle-upon-Tyne), Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)
South Devon Botanical and Horticultural, Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
South London (Royal), Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
Shacklewell, Sept. 1.
Surrey Amateur (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
Turriff, Sept. 17.
Whitehaven, Sept. 17, Dahlias.

POULTRY SHOWS.

Birmingham and Midland Counties, 14th, 15th, 16th, and 17th December.
Bristol Agricultural, December 7th, 8th, and 9th. (*Sec.* James Marmont.)
Bury and Radcliffe (Lancashire), Sept. 3 (Radcliffe).
Cornwall (Penzance), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)
Manchester and Liverpool, Sept. 23. (*Sec.* Mr. H. White, Warrington.)
Royal North Lancashire, Aug. 26th, at Preston.

THE LAST EFFORT IN FRUIT-TREE CULTURE.

This may appear a strange title, but, nevertheless, one more apposite to the subject in hand could scarcely be selected. It is well known, that the fine-spun-systems of training adopted some twenty years since, have lapsed into a state of comparative disuse, and shrunk into insignificance before the much more important question of ripening the wood. And now, "a word and a blow" be the maxim; the blow first, if you will. Those who have acted on the oft-repeated advice in The Cottage Gardener, as to an early dressing of the wood, will have little now to perform; but for the sake of those who have procrastinated, and young beginners, we feel induced to go over some of the fruits in detail.

1st. The Peach, including, of course, the Nectarine. Gross trees will produce more lateral spray through August than at any other period, providing the weather has been moist and warm. If they have been well stopped betimes, they will, in endeavouring to burst their bondage, spawn forth branches of young twigs at their terminal points, more like a willow stool than aught else. Let not our readers feel alarmed at this wantonness, but continue to pinch away until a cessation of this over-active condition takes place, which will be the case in September. At the same time, and on the same tree, let care be taken to encourage growth to the very last on all weak portions. This is the time, and these are the circumstances under which the equilibrium of the branches is established. Every gross shoot that is stopped but relinquishes a portion of the strengthening fluid to its weaker neighbours. Now, is not this better by far than the plan of former days, when we might see trees with shoots a yard long on the one portion, and others dwindling into utter insignificance before the gigantic power exercised by these vegetable monopolists? And what was the practice at the winter-pruning in those times? "Oh!" said the man of the blue apron and crooked knife, "you must cut these stray shoots back to an eye or two, or they will 'run away with the tree!'" Well may the old pruning-knife be ashamed to show itself in broad daylight after such monstrous revelry. In those days, it might be seen poking its impudent nose from a slit in the corduroys, just above the hip of the king of spades; now it rests quietly concealed in the pocket of a neat kersey vest, and dignified, forsooth, with a dainty white handle, the emblem of innocence, we suppose, as compared with its ancestry. It need hardly be repeated here, that whatever shoots remain loose from the wall should be fastened close to it, without a moment's delay, for all the heat of the wall will be required, henceforth, to carry out the solidification of the wood. This is the way to provide against the blossom-castings, &c., of the ensuing spring. There can be little doubt that not only the wood itself, but the very parts of fructification are thereby rendered capable of enduring a much lower temperature.

And now, the fruit must be considered; in all our more northern counties, of course ripening. In order to get the fruit of high colour and good flavour, a degree of sunlight, acting immediately on the fruit, is requisite. It is not with the peach as with the grape: in the latter case, the immediate action of sunlight would be prejudicial to size, colour, and flavour. That such is best adapted to the end in view, is best attested by the natural habits of the trees respectively. In their natural clime, the peach, subdued in its grossness by a sunlight far beyond that of Britain, is not productive of that profusion of green spray that the British peach is liable to; but the vine—who has not heard of the vine-dresser? Every part almost of the Sacred volume contains beautiful similes, in which the vine and the vine-dresser play a most important part. The fair inference, then, is, that the vine, unsubdued by intense solar light and heat, produces a profusion of spray; need we add, that the fruit *must be* subject to a considerable amount of shade.

It is the practice with all good peach growers to take extra measures, whilst ripening, to throw sunlight on the fruit; and in order to carry this well out, it becomes requisite to remove a few of the leaves around each peach, sometimes totally plucking them away, and occasionally pinching halves away. This course is more particularly necessary with the late kinds, and in our northern districts. The best time, we think, to commence this operation, is the moment the fruit commences colouring; thus pointing to the time when *nature would have it done.* To totally unshade the fruit earlier would be to lessen its size, and, indeed, detract from its quality in many cases, by hurrying the ripening process in an inordinate way. About the end of August, then, we say, stop every shoot on your peach-trees which has made a foot of growth. This is meant to apply to the early-made wood; as to the late and watery spray, and all those secondary shoots, the result, in the main, of former pinchings, off with their heads from this time forth, as soon as they have grown three inches. This persisted in, the roots will gradually acquire a degree of torpidity, and the certain result will be, larger fruit, and an earlier sinking to rest—productive, of course, of firmer wood and increased hardihood during the ensuing year.

Apricots.—By the time these remarks reach our readers the fruit will be all gathered; and generally,

close on the heels of their removal, healthy trees lay in more sap by a *last effort* at growth. Now, there is no objection to this, so long as no late spray is allowed to shade the natural spurs or blossom-buds for the ensuing year. This must, by no means, be permitted. A great portion of the bad setting, so frequently complained of, is chargeable on this bad practice. As far as our experience goes, no fruit requires so much intense sunlight acting *immediately* on the embryo fruit buds for the ensuing year, as does the apricot. Hence the reason why, in some parts of the country, we are frequently astonished to observe splendid crops on the gable or chimney side of some cottage or farm-house. Not that the sun shines any hotter on the cottage than on the garden wall; but that the cottager, like the cat in the fable, has but one shift with his Moorpark—viz., to cut away all breast shoots betimes, "to save farther bother." But here behold the difference at the root between the cottage apricot and the pampered tree of the garden! The first, planted in an off-hand way originally, amongst ordinary soil, foundation stuff, and scrapings of any kind, and most likely a bed of exhausting herbaceous plants, or ordinary flowers and shrubs, standing for years over the roots; or, it may be, a stone pavement. In our kitchen-gardens, how different the conditions. The most powerful soils, prepared some thirty inches deep, and afterwards a system of vegetable cropping carried on, requiring, perhaps twice a-year, a vast amount of manure. This, with the occasional infringements of the spade, produces, of course, fitful growths, productive of an undue amount of shade; whilst the cottager's produces just enough wood annually to enlarge the fabric of the tree *a little*—and only a little. Such we have witnessed in hundreds of cases in the north-west of England, and have not unfrequently been shamed by the superior crop of a clodpole.

Our advice, then, is—the moment these remarks meet the eye, let every "breast shoot," productive of shade to the little nests of blossom-buds beneath, be henceforth close pinched. If, however, any terminal points are still disposed to ramble, and thereby enlarge the tree, and cover naked spaces of walling, by all means let them do so as long as they please.

Pears.—All the more tender kinds, as *Winter Neilis*, *Beurré Rance*, *D'Aremberg*, *Colmar d'Auch*, *Passe Colmar*, *Ne plus Meuris*, &c., will be immensely benefited by total removal of all immature-looking spray. All such may be at once known by its pale colour, by its succulence, and even by a tendency still to extend. Those on the quince stock may, unless very gross, be allowed to grow as long as they please; for the probability is, "taking them in the lump," that they will make too little wood.

We are going over our Pears now, August 10th, and slipping off every young shoot produced from the points of those pinched in May and June. In addition, the point of every growing shoot is pinched, excepting leaders, those required to extend the frame-work of the tree. In all bearing trees, too, of some age, the terminal points should be left growing to the last, in order to attract the sap well to the extremities, thereby inducing a constant supply to the fruit in its passage. How often do we see pears heavily laden at the extremities, yet barren at the lower portions, where a constant disposition exists to produce breast wood, coarse as a forest tree, the extremities meanwhile starved, and the fruit half-fed. This is traceable to the old spurring system, or the leaving, originally, a heel of the young breast shoot with the fallacious idea of producing spurs.

That such have occasionally produced spurs, we do not deny; but if true to themselves, and their conditions, coarse robbers must be the result in ninety cases out of a hundred. How is it likely that the fruit can be duly nourished, when the sap is appropriated by these as fast as it is produced. In addition to these proceedings, those who have been neglectful at the proper period had better go over their trees, and remove all the useless shoots—those which would not be reserved at the winter's pruning.

Cherries, Plums, &c., will require a little examination, especially the latter; but these will give little trouble; the principles of handling are nearly identical with the pear, &c.

Alpine Strawberries should have every late runner trimmed away, and slate, or some impervious material, placed beneath them, giving it a slight inclination to cast off the wet. These, in dry weather, would enjoy a watering with liquid manure.

Autumnal Raspberries.—Every useless sucker should be plucked away in the end of August, in order to get sunlight on the fruit. If they appear poor, liquid manure may be given with great advantage; of course mulchings have been applied. R. Errington.

RHODODENDRONS.

The next six weeks, or two months, being the best time in the year for removing and transplanting hardy Rhododendrons, I shall put together to-day the notes and observations I have made for a long time on this family, so as to refresh the memories of our readers who are about to remove all, or one-half, of their best Rhododendrons, so as to give them double the room, and enable the plants to have freedom on all sides, that they may bloom down to the surface of the ground, each plant being a full specimen in itself, of which nothing can be seen but leaves and flowers. Whenever you can see a stem, or any part of a Rhododendron's wood, that grows as a bush in the flower-garden, unless the plant is a standard, depend upon it that plant has either been badly managed in former days, or else it is a variety not worth cultivating, owing to its bad habit of growing in a loose, straggling way. Twenty years ago, last May, I walked round a single plant of a common Rhododendron, not far from the Botanic Garden, at Manchester, and it was just thirty steps, or thirty yards, in circumference. It was then not more than five feet high, and not the least branch could you see all the way round; nothing but leaves and blossom buds. Ten or twelve years after that, I saw a bank of Rhododendrons on the north-east side of a kitchen-garden, the wall of which was twelve feet high, but some of the Rhododendrons were higher than the wall. They were planted quite thick, nobody there knew when, and nothing in the way of thinning or pruning was done to them ever since, and of all the horrors ascribed to the influence of the nightmare, none could come up, in my eyes, to those presented by this long bank of lanky Rose-bays. My third instance is of a *spruce* old gardener, who made a fuss in his day, but not with Rhododendrons, for he went to a great expense in making large boundary belts and borders of Rhododendrons for the pleasure-grounds of his employer, one-half of bog, and one-half of peat, or heath soil, for some, and all the compounds possible with soils for others; also, he had the opinions of Mr. Standish, Mr. Hosea Waterer, and Mr. John Waterer, of Bagshot, the greatest Rhododendron merchants in the world—but all would not do. This gardener could not bloom a Rhododendron, out of some thousands, worth looking at; and for nine or ten years he tried all the experiments with them that have ever been suggested, but all with the same result. In short, this gardener could not grow Rhododendrons at all; and the cause of his failure was, that his beds were cut out of chalk, or so near the chalk that the Rhododendrons would not live above two or three years in that garden. Some said that it was the peat that did not suit them; others maintained that the open and

exposed-to-the-sun situation of the garden was the cause of failure. Among other questions, I was asked what I thought of exposing Rhododendrons to the full sun on a poor bottom. I could not call to memory having ever seen fine Rhododendrons growing on chalk, but I had seen beautiful specimens of them growing and flowering luxuriantly on the steep braes of the Malvern hills, near Worcester, where they were as much exposed to the full mid-day sun, and on as steep ground as you could find on Arthur Seat, near Edinburgh, or the Peak of Teneriffe itself.

It is a mistaken notion altogether, that because Rhododendrons will grow in the shade of trees better than most other evergreens, that shade is essential to their well-being, and that they will not flourish on steep banks and declivities facing the south, if the soil is suitable. Rhododendrons will grow on the steepest mountain ranges, as well as in the deepest shade in the lowland woods; but chalk or calcareous earths are unpalatable for the whole race in any situation whatever, and it is almost the same with all those we call American plants, and yet the early spring Heath, called *herbacea*, will luxuriate in a chalk-pit, if it gets a little sandy soil to begin with. There is one situation, however, and one only, where the more straggling and the more bare of leaves a Rhododendron is, the more it is in character, and that place is the "wilderness," or "dingle," in large places,—the rockery, or rock-garden, where such names are preferred for imitations of wild, broken scenery.

Unless Sir Joseph Paxton will give us some imitations of the steep, rugged banks of the river which runs down from Chatsworth and Bakewell, by the Peak of Derby, in the new Crystal Palace, he may grow the large Indian Rhododendrons in it, but they will not be in natural character. It is now just fifty years since the father of all the best and choicest flower-garden Rhododendrons, *Catawbiense*, was first made known to the gardening world by a figure of it in Michaux's North American Flora, published at Paris; and we have it on the best authority, in Mr. Hogg's valuable memoir (*The Cottage Gardener*, 250), that the Rhododendron was first discovered on the top of the Great Roa, or Bald Mountain, near the source of the Catawba River, where nothing but the short, stunted grass could shade, even its roots, from a summer sun, of the strength of which we have little idea in England, so that we need not seek the shady side of a garden, much less the shade of trees, to plant Rhododendrons in.

In cottage gardens, there is no plant more hardly dealt with than the Rhododendron. It is either stuffed in under trees and coarse-growing shrubs, where nothing else would grow, or, if there is a bed or clump set apart for Rhododendrons, the plants are sure to be so thickly planted, that in three or four years they run into each other, and get so much crowded, that all their bottom leaves and branches are smothered, and no flowers appear but on the very top of the plants. Now, it is proper and lawful enough to plant your new Rhododendron bed, in the first instance, so that the lower branches will nearly meet, but then we must bear in mind that the branches of the two nearest Rhododendrons must never actually meet or cross one another; and if they do so the first or second year after planting, the bed ought to be re-arranged. It is not, therefore, by the number of years, but by the growth of the plants, that we ought to be guided in keeping our Americans to their "boundaries." Still, as a general rule, it has been the practice for many years with the best gardeners to take up their best Rhododendrons in beds every third or fourth year, so as to give them more room, that they might flower down to the very soil; and although they could be thus dealt with almost any time in the year, experience has determined that from the middle of August to the end of September is the best time to transplant them. But when new varieties are to be bought and taken from a distance, October will be time enough to begin them; and if they are not finished until March they will take no hurt. There are few gardens of any note in the country where Rhododendrons are not grown, and as few in which real justice is done to the plants. They are so accommodating, that they will bloom, year after year, without care or trouble; and on the principle of letting well alone, they are allowed to overcrowd each other, and run wild, as it were, and by the time they get out of bounds, one-half of them are not fit to be seen on being released, and the best part of the other half must be cut down, and a season lost before they look like themselves again.

Within the last few years, growing the finer kinds of Rhododendrons received a great stimulus from the splendid collections of them sent by the great Bagshot growers for exhibition in London, first to a private place, then to the Botanic Society's garden at the Regent's Park, and last of all to the garden of the Horticultural Society at Chiswick, where, through some unfortunate mismanagement about the tents, they got to loggerheads about them, and so gave them up; and they might as well give up their right ears, for there is no feature at all the exhibitions which takes so well with the public; and you might as well think of taking the Lord Chancellor by the sleeve to a country dance, as to get hold of Mr. Waterer, or Mr. Standish, on one of their show days—they are so overwhelmed with ladies, and other great folks, talking about and pricing their beautiful plants. That very wet day, in June, I had the best luck I ever had, in finding these great growers resting on their oars, but dripping wet, under the great tent at "the Park;" and, wet as it was, we talked ourselves dry over the "fields and oceans" of beautiful Rhododendrons. It was quite a feast to me, who never saw such a sight before. I contrived to make some few notes, but I was not at all satisfied with them, and I waited till the July show, determining to book as much as I could; and then, only one of the parties, Mr. John Waterer, could find time to go round with me, and he was so pulled about by this or that customer, all the time, that I must claim the value of my notes myself, and if there is anything wrong in them I must also take the blame.

I have said already, that I likened some of the tall standard Rhododendrons to scarlet Nonsuch apple-trees, in ripe fruit, seen at a distance. Many of these standards are really magnificent specimens, and, I should think, from thirty to forty years old, judging from what Mr. Standish told me. He said he was only a young beginner, in comparison to Mr. Waterer, and could not show such standards for some years to come; and yet he has been growing them these fifteen years, and more. There is one kind, called *Roseum elegans*, and whether it is that it forms a standard faster and easier than others, or that people are fonder of it, I did not enquire, but I could see two of it to one of any other kind, all over, or rather under the tent. The original species, *Catawbiense*, was there in fine standards, and as low as 5s. to 7s. 6d. each; but the general run of prices is from a guinea to 42s., for good, handsome plants. There were many there, however, fully worth ten guineas a-piece; and, for a huge bush specimen, the finest and the best there, according to my fancy, is one called *Lady Eleanor Catheart*. This has a clear rose-coloured flower, with brown spots at the bottom of the upper petals, and flowers in the middle of the Rhododendron season; the price of moderate-sized plants of it is 31s. 6d. One called *Waterer's Celebrandum* is the same price, and is the very best late crimson kind in cultivation, and is quite hardy. *Blandyanum* and *The Grand Arab* are the two next best crimsons; small plants of each

are charged 10s. 6d., and beautiful standards of *Blandyanum* are from 42s. to 63s. *Erectum* and *The Duke of Norfolk* are two shades of rose of the first water; the first is 10s. 6d., and his Grace 21s. *Brazanum* is in the same way, and nearly quite as good for 21s. A group of these fine high-coloured ones, planted in a recess on the lawn, and backed by a rising ground covered with evergreens, would be the richest thing one could plant or desire in the finest garden in England. Then, for cheaper plants of the same colour, but not quite so good, we have *Atrorubrum*, 7s. 6d.; *Cruentum*, 7s. 6d.; *Floribundum coccineum*, 7s. 6d.; and *Vestitum coccineum*, 21s. The best scarlet is *Soleil d'Austerlitz*, 21s.; *Towardianum*, 10s. 6d., a fine, large, rosy-lilac; *Leopardii*, a still better lilac-rose, with crimson dots, 10s. 6d.; *Sherwoodianum*, 5s., in the same lilacy way, and a very profuse bloomer; and, last in this tint, *Everestianum*, 3s. 6d., flowers in very large showy heads. The best purples are—*Purpurea elegans*, 3s. 6d.; *Currieanum*, 7s. 6d.; *Maculatum purpureum*, 5s.; and *Atrorubrum purpureum*, 5s. The two best whites are *Gloriosum*, 5s., and *Album elegans*, 3s. 6d. *Luciferum*, 3s. 6d., and *Perspicuum*, 3s. 6d., are the next best whites, and, with Veitch's *Alba multiflora*, would be sufficient to dot over an acre of Rhododendrons. The following I noted as good, superior varieties:—*Blatteum*, 7s. 6d., shaded purple; *Bicolor*, 2s. 6d., rose, with a white eye; *Candidum*, 3s. 6d., white; *Maculatum purpureum*, 5s., spotted and shaded purple; *Lady Anne Baird*, 21s., a beautiful rose; *Pictum*, 2s. 6d., a fine white, with yellowish spots; and *Victoria*, 5s., a purplish scarlet. All these are of the very best that were exhibited this season.

To make this paper more complete, I ought to give selections from *Ponticum* and *Maximum* for underwood, and other places; of the best dwarf ones of the breed of *Dahuricum*, for the outsides of clumps, beds, or borders; and also the best forcing ones of the *Catawbiense* and *Arboreum* breeds; but I must see all these in the best nurseries before I venture on a thoroughly useful list.

D. Beaton.

MUTUAL DEPENDENCE OF THE VARIOUS DEPARTMENTS OF GARDENING.

Every man is a centre of influence. He influences others, and is influenced by them in turns; and what is the most startling fact of all, that influence is not bounded by the present, but extends to all future ages and epochs. Let our young friends ponder the responsibility of their position.

If one thing more than another renders writing here a labour of love, it is the knowledge that so many young professional brethren are readers. I would wish them, in their studies, to avoid the contracted, and embrace the expanded. They have now opportunities for gaining knowledge, which we, in our early days, sighed in vain to obtain. If they use their opportunities, they may soon be a-head of their present instructors; but whilst they study gardening, they must neglect no light that a collateral science would yield. Every department of knowledge is merely a section of an harmonious unity. The more parts we are somewhat acquainted with, the more easily shall we comprehend the ins and outs of that to which our attention is specially directed. In these days, to approach to be a *great* gardener, a man must be a *little* philosopher. In his present social position, the gardener cannot be expected to be more; he will find it difficult to manage with less.

True, some of our staid supports of society may cite poetry about "a little knowledge being a dangerous thing," and speak of smatterers in a way not the most alluring for youth. Honest men that they are! they wish to keep any little distinction they possess, not by *advancing*, but by impeding others coming up to them. A *conceited* smatterer ever brings a mixture of contempt and pity in his train, but even a smattering, when joined to humility, and earnestness of purpose, will conjure up many make-shifts, savings of time, and savings of shoe leather; matters of no little moment, if a first-rate gardener told me the truth the other day, when he stated that double the amount of labour had to be gone through *now*, that would have been deemed almost impossible twenty years ago. Besides, as "Rome was not built in a day," so I have an idea that there was a period when the greatest philosopher must have been a *very little* one.

Our young friends, then, must not pay too much attention to the wise saws of these respectable stand-still gentlemen. "Let the cobbler stick to his *last*," is one of their favourite axioms; and so say I, if a man is content to be a mender of shoes, or, as Johnson would say, "a *bungler*" all his life;—in other words, if a gardener is to be nothing more than a digger and a hoer. Great cobblers there have been, and are; men who have done, and are doing much for humanity, but they managed to improve upon, or throw aside the *old last*. Arkwright might have been a tolerable barber, but if he had stuck to his razors, his shop, and his soap-box; and if Watts had never troubled himself about the lifting of the lid of the tea-kettle that supplied him with hot water; ages might have passed away before society possessed the advantages of the steam-vessel, the locomotive, the weaver's loom, and the spinning Jenny. If our knighted gardener, Sir Joseph Paxton, had confined himself to the mere routine of his duties, leaving builders to plan structures for plants to live in, is it likely that we should have had a Crystal Palace in Hyde Park, or the well-founded expectation of a more brilliant one at Sydenham, which the humblest gardener will be unable to visit without gaining some ideas for home practice?

Descending from such matters, we find the same principle in active operation in the various departments of gardening. Exclusive attention to one department will seldom insure great success there, unless there is a general knowledge of all the others. With that general knowledge, success ought to be greater than when the attention is greatly divided, or no benefit would flow from the division of labour. We thus possess the advantages of generalization of ideas and concentration of thought. This would not be the case did writers and readers confine themselves to their particular department, never going beyond them for an illustration, but rigidly standing "like tubs on their own bottom." Writers would sink into monotonous, the same-thing-over-again calendarists; readers would only peruse that which from the heading they thought would suit them, and thus lose most of the advantages and pleasures that gardening would yield to them. This applies chiefly to amateurs. To such, with leisure and intelligence at command, we must look for most of our improvements, and thus they will pay back, with interest, the debt they owe us for our practical details. Though not greatly trespassing across our departmental limits, these details will be interesting and useful, in proportion to the breadth of view with which they are developed. The man whose hobby is a greenhouse will thus find it his interest to know something about orchids, cabbages, and pine-apples. Just think of acting in a contracted spirit, and contemplate our friend, Mr. Beaton, wandering like an outcast *confined* to his flower-garden. Could he, or *dared* he have entered a plant-stove, and told, as he did so nicely last week, how the denizens usually associated with a brow beaded with perspiration might be seen in their glory in a sheltered, airy grass-plot out-of-doors? Would he have been allowed, without a struggle, to enter a greenhouse, turn it pretty well inside out, and, from some of its choice beauties, select material for such gor-

geous-coloured flower-beds as our fathers never dreamed of? How would your humble servant have fretted, like a trapped bird, if *mewed* up within the four walls of such a greenhouse—forbidden to speak of the many uses to which such a house could be applied—told that he must keep his plants there for ever and aye, be they growing or standing still, in full gay feather, or in dishabille; resolutely denied the use of cold pit or hot pit by Messrs. Appleby and Errington, and warned by Messrs. Beaton and Robson from trespassing on their grounds, for standing, plunging, or planting-out room.

These last matters have been frequently alluded to, but not more often than their importance demands. The huddling of greenhouse plants into shady corners in summer will soon be numbered with the things that were, especially among amateurs. I mention amateurs, as they are more likely to pride themselves in doing well whatever they attempt, and because this bedding system, and the continual sweeping and cleaning in large places, keeps many of the best gardeners always in a bustle, and always behind. We look at plants, day-by-day, our finger ends itching to shift them, to plunge them, or plant them out in an open or sheltered place; but day-by-day brings with it some more pressing necessity. Good plants, standing in north or shady borders, tossed and tumbled by winds, can scarcely be in a worse position. Every plant that will bear light should have its own share of it in summer, though it should never be taken from shelter to full exposure at once. When gradually exposed, plants even of the finest hard-wooded kinds do not suffer from the branches being exposed. The roots chiefly suffer from exposure—being burnt by the sun in the dog-days, and frosted in the cool damp nights of autumn. A soft, porous, damp pot is about as effectual for this latter purpose as a damp woollen stocking drawn over a bottle of water is useful for cooling the contents, by the evaporation of the moisture on the stocking when exposed to a hot atmosphere. Plunging all hard-wooded plants so as to secure perfect drainage and freedom from worms is of great moment. Plunging and planting-out soft-wooded plants, as Chrysanthemums, Salvias, Geraniums, Cinerarias, &c., furnish them with an equilibrium as respects heat and moisture, and guards them from sudden changes, while it greatly diminishes the necessary labour. "But why tell these things in the middle of August?" Better late than never: besides the end of this month, the whole of the next, and part of the succeeding, are of great importance for securing winter embellishment; and those plants that cannot be protected with glass will, if plunged or planted out, suffer less from extremes of all kinds than those standing in pots; that is, *provided* the water does not stand about the roots. The soil is more equal in its temperature, and higher in its average in autumn, than the atmosphere is, and greenhouse plants, warm at the roots, will resist, uninjured, a degree of cold in the branches which they could not endure with the pots crusted with ice at midnight. The luxuriance, and yet robustness of such plants, will bear no comparison with those coddled in pots in the usual way standing above ground.

While on this subject, I may mention being struck the other day with two rows, avenue fashion, of *Salvia fulgens*, and *S. splendens*, on the sides of a walk, grown as standards, with clean single stems several feet in height, and just coming into fine bloom. *Fulgens* does well with me in beds; *Splendens* was always a wreck the first rude wind that came, and this place catches it pretty well from every point of the compass. Standards of either, and especially of *Splendens*, would be out of the question with me. I have seen it in the neighbourhood of London a splendid bush, and a gorgeous blaze of scarlet on a lawn. I have, so far as I recollect, seen it pretty good in some of the sheltered nooks of Scotland. Those who are not visited with rough winds, and sheltered and warm, I would advise, by all means, to grow this Salvia out-of-doors, both as bush and standard. In the same place, I saw a bed of *Erythrina Cristagalli*, that would keep an enthusiast dreaming for a month. The rain that had marred the beauty of everything else, seemed to have been charmed from touching it. R. Fish.

THE HOLLYHOCK.

(*Continued from page* 322.)

It is exceedingly interesting to watch the progress of a flower, or rather class of flowers, advancing year by year, and step by step, towards perfection. And it is a remarkable fact, that though we have been raising seedlings, and endeavouring by skill and ingenuity, we have never as yet attained in any one flower the acme of perfection. Whether the florist practices upon the Auricula, the Polyanthus, the Carnation, or the Pink, he still finds in his newest and best varieties something wanting, some property deficient, or over-done. This is the case with the Hollyhock more than with any other flower; hence the desirableness of persevering in raising new varieties still. We have no doubt, in a few years, there will be varieties as much surpassing the present generation, as those we possess now surpass such as we remember to have seen ten or fifteen years ago. All that is necessary is hybridising, and saving seed from the best-formed flowers. But, says the amateur, what are the points or properties that constitute the best varieties? We will endeavour to answer that question.

Characteristics.—The Hollyhock, is, as is well known, a tall-growing plant, but a good variety need not exceed from four feet to six feet; the foliage on the flower-stem should be of moderate size, or rather small. This property is to allow the flowers to be, when in flower, more exposed to view. Towards the top of the flower-stem there should be no foliage at all. On the stem, the flowers should be at such a distance that they do not crowd upon each other, but allow each bloom to expand fully. Each bloom should have the guard-petals perfectly flat and circular; they should project about half-an-inch beyond the central one, forming, as it were, a floral card to set them on. The stouter they are, the better they will then support the others, and they must be of the same colour. The central petals should be numerous and even, with as small hollows amongst them as possible; they should stand up boldly, quite as high as they are in diameter; the whole to form, as it were, a ball cut in two, with the flat side set upon the guard-petals. If a self, the colour should be full and bright; and if mottled, or striped, these variations should be in every flower, and on every petal alike, and the different colours separate and well defined. Then, lastly, for size. We fear this property is becoming too much favoured. Though a large flower is desirable, yet this quality may be pushed too far, till the flowers become coarse and vulgar, like the common pœony. From four to five inches diameter will be quite large enough, measuring to the extremities of the guard-petals. We have seen flowers nearly six inches diameter, but we considered them anything but elegant or beautiful, as florists' flowers.

Such flowers, possessing the whole, or a greater part of the above properties, are the right ones to hybridise and save seed from; but such good kinds are not very free to produce seed, the flowers being often so double as to exclude the productive powers; hence it behoves the florist to watch those that do seed with all diligence, and the moment they are ripe to gather them, gradually dry, and put them by till the spring, in a place secure from damp and mice, for these little creatures are very fond of the seed. The seed is produced upon a flat receptacle, or pan, and previously to putting it by, it will

be advisable to separate the seed from its receptacle, because it is very apt to turn mouldy, and rot the seed.

Season for Sowing.—This choice seed should have choice care bestowed upon it, for every seed is valuable; if one or two are destroyed, it is quite possible that these might be the very ones that would have produced the finest flowers. Being so choice, it is not desirable to expose it to being sown in the open border or bed, for here, again, some of the best may perish. The best way is to sow the seed about the month of April, in wide, shallow pans, placed under a cold frame, upon a stratum of rough coal-ashes, at least two inches thick. Sow it on a soil formed of loam, three parts, leaf-mould, one part, with a due proportion of sand. Cover the seed about a quarter-of-an-inch thick, and see that there is no ingress for mice or slugs; the former will feed upon the seeds, and the latter upon the seed-leaves, so that what escapes the former will be destroyed by the latter. Water apply through the fine rose of a watering-pot, renewing the application whenever the soil becomes dry. Give plenty of air daily, or the plants in this young and feeble state will infallibly fog or damp off. The plants, when advanced two or three leaves, may be set out-of-doors in a sheltered nook or corner for a short time, to harden them off, and, in the meantime, a bed should be prepared to transplant them into. This bed should be well drained, and consist of good loam, enriched with a good portion of very well-decomposed dung. Dig it over at least twice, to incorporate the manure well with the soil; rake the surface over, and plant out your seedling hollyhocks at six inches apart every way. This will be space enough for them until the September following, when they should be planted out where they are to bloom. T. Appleby.

(*To be continued.*)

CONIFERÆ.

(*Continued from page 275.*)

Cedrus Africanus, *syn.* elegans (The African, Mount Atlas, or Elegant Cedar).—This is, as its name imports, a truly elegant tree, with much of the appearance of the Cedar of Labanon, excepting that the branches are not so decidedly horizontal, and the leaves are much more silvery; hence it is sometimes popularly known as "The Silver Cedar." It grows to a considerable height, is quite hardy, and its wood is so hard and durable as to render it very valuable for various purposes.

C. deodara (The Deodar, or Indian Cedar).—In its native woods this most beautiful tree rises to the height of 120 feet, and must then make a truly handsome object, combining elegance with majesty. Even the Indians are sensible of the great beauty of this tree, for Bishop Heber says it is "a splendid tree, with gigantic arms, and narrow dark leaves, which is accounted sacred, and is chiefly seen in the neighbourhood of ancient Hindoo temples." We have, on a former occasion, eulogized the graceful beauty of this now well-known tree, we need not dwell upon it now, but will just notice that Dr. Falconer gives the dimensions of a fallen Deodar, which he saw on the Himalayas, as being 36 feet in circumference at the base, and 130 feet in length. He also says that the wood of this tree, taken from a Hindoo temple, supposed to have been built a thousand years ago, was apparently as sound as the day it was placed there, no insect being found in it. This is the more remarkable, because in that country insects abound and increase amazingly. Sir A. Burnes states, that the frames of houses are made on the Himalayas, and floated down the river Hydaspes or Schem to the Mysore; the durability and fragrance of the wood recommending it for building more than any other tree. On this river the Macedonians, he says, constructed their fleet of the wood of this tree by which they navigated the Indus. Mr. Loudon, in his "Arboretum Britannicum," remarks, that the wood has a very clear, close grain, capable of receiving a high polish; so much so, indeed, that a table formed of the section of a trunk nearly four feet across, sent by Dr. Wallich to the late Mr. Lambert, has been compared to a slab of brown agate. Combining all these facts as to its beautiful and elegant appearance, its usefulness and great size as a timber tree, its power of resisting the attacks of insects, the high polish to which its wood may be brought by the labour of the cabinet-maker, and, lastly, its almost incorruptibility, this is surely a tree to be highly prized and most extensively planted, especially as it has been proved to be perfectly hardy; and, furthermore, as it has now become sufficiently cheap (1s. each) to be planted out as a forest-tree on our waste moors, intermixed with the Larch and the Scotch Fir to protect it from the blasts of autumn and winter, and draw it up so as in time to form such a tree as to approach the magnitudes alluded to above. By planting them thus thin, and filling up the space between each with nurse trees, a much less number of these trees would be required per acre. It is quite true, it would not thrive so quickly if planted in the manner that too many of our forest trees are done—that is, just a hole scratched, and the trees thrust in anyhow. The Deodar is worthy of a little care and attention at the first.—See our remarks on planting Coniferæ in a former number. The Deodar, like its equally valuable and interesting relative, the Araucaria, is well adapted to form avenues to a baronial residence, a temple, or in the centre of an arboretum. If the avenue was formed by a front row of Araucarias, and a back row of Deodars planted in the openings between the Araucarias, the effect would be surpassingly grand and imposing. The dark foliage of the Araucaria would contrast beautifully with the grey tint of the foliage of the Deodar; the latter would (in this country, at least) grow much quicker than the former; hence the spectator would imagine he was looking down a double avenue of two kinds of the most beautiful trees in the world, placed so as to show the beauties of each to the greatest advantage; and if each tree were examined in detail, the effect would be equally agreeable to the eye of taste. Let any one of our readers that have time and means, visit Elvaston Castle; there they may see what can be accomplished in the way of avenues with these two noble trees. It is true they will not see trees one hundred feet high; but, with a very little stretch of the imagination, they will be able to realise the effect such avenues will have fifty or a hundred years hence.

There are, it is said, several varieties of Deodar, respectively named *crassifolia, tenuifolia,* and *viridis.* We have also seen one much more drooping than the species; but none of these variations are, in our opinion, of sufficient importance (except as curiosities) to be cultivated largely. T. Appleby.

(*To be continued.*)

SOME WINTER CROPS.

Some time ago, when we urged on our friends to occupy the ground then vacant, we suggested the propriety of their leaving, or arranging a well-sheltered border for *Winter Spinach,* and an open, yet dry, airy, plot for *Onions;* not but that the latter would like a warm corner too, but then such honoured situations must be kept for less hardy occupants.

As *Onions* stand the rigours of a moderate winter pretty well when the ground is not naturally too much saturated with moisture, a well-selected portion of the open square will do very well. In so arranging, we generally contrive to have such low crops as this at an

outside, it looks better than if it were bounded right and left with such things as Brussels Sprouts or Brocoli, and if an exhausting crop has been lately removed, then let some well-rotted dung be dug in, or, rather, that ought to have been done some time ago; but we are averse to sowing winter onions on rich ground, they are apt to get too gross, and consequently are less fit to stand a hard winter than when more wiry and firm, which they are more sure to be when stimulating manures are withheld. However, we will suppose the late crop to have been a heavy one, and dung necessary, then let that be buried pretty deep, in order that the roots may only reach it in spring, when all danger from it is past, and its utility will be more apparent. In regard to the kind sown, much difference of opinion exists, some insist on the *Silver-skinned*, others on the *Tripoli*, while we have had as much success with a kind resembling the *Strasburgh* as with either of the other two, and we find it equally hardy, and a much better onion for general purposes. The *Tripoli* is an ugly, deformed bulb, large, certainly, but that is poor compensation for the waste that attends it when cut up. The *Silver-skinned* is more generally useful; and where young ones are wanted to draw for salad purposes, this is the best of all, it being of a milder character than many others, and, as the name implies, it is, perhaps, whiter than many of them. In sowing, regard must be had to the purposes for which they are wanted; for if a considerable quantity be required to draw young during the autumn and winter, then sow broadcast in beds the usual width; but if only a few be so required, and the crops of next spring be of more consequence, then sow in rows a foot apart, but tolerably thick in the row, as a few are easily taken out in spring, and they transplant admirably, and do well, only they are somewhat later than those allowed to remain where sown. As the ground is generally dry at this season, we need not urge the propriety of not soddening it by treading on it when wet; but should the weather continue so dry as to render it necessary to administer water, let that be done in such a way as not to have occasion to tread again on the watered ground, and then let the whole be slightly covered with some shading material, as we have recommended for cabbage and other seed beds, which, however, remove when dull weather sets in for a day or two, or when the seed begins to vegetate. Nothing more will be required until they show themselves distinctly, when the hoe may be run through them, provided they be in rows; those sown broadcast must be kept clear of weeds, and when they are in thick patches a few may be removed at once, as they will only kill each other. It is a very good plan to work some charcoal ashes in ground sown with onions, as it acts both as a fertilizer and preservative; it is a very desirable ingredient to mix with the soil for this crop.

Spinach is also sown at this time much in a similar way to what we have detailed for onions, only it ought to be favoured with a more sheltered situation, as it is expected to continue in a growing state all the mild part of the winter, in order to furnish a supply of crisp, fresh, green leaves, when wanted. Now, though the plant can withstand a tolerable amount of severe weather, yet the purpose is not altogether served by its standing the winter, it ought to be *kept growing* as well; therefore, every available means must be made use of to attain that end. A south border, well sheltered from the east and west likewise, and the ground made as rich as possible. The conditions being just the reverse of the crop noted above, an opposite course must be adopted: the long-leaved or prickly Spinach is the best to sow now, but it need not be sown thick if the seed be expected to be good; still, it is safer to sow plenty, provided you can insure another necessary operation being attended to, that is, "thinning in time;" not but that winter Spinach may stand much closer than the summer crop, but it is, nevertheless, advisable to thin it in part. As the crop is never expected to get very high, rows a foot apart, the same as for onions, will do very well. We have drilled it eighteen inches, but there is no advantage, unless the bulk of the spring crop be more important than the winter one: with us the latter has been the chief consideration.

If not done before, *the principal Onion crop* will now have to be housed; after having lain some time in the sun to harden, and dissipate the moisture calculated to induce a too early growth, they may be carried and laid down carefully on some cool, airy floor (boarded, by all means); there they can lie until some wet day they can be sorted, some of them tied up, and the others put away. In so putting them to rights, let it be distinctly understood that nothing has to be removed except a very little that may fall off, and the roots twisted off by hand—no knife used on any account. All partially unsound ones, and "thick necks," may be put aside for present use; but there is one description of Onion we would urge on our friends to appropriate to its legitimate purpose at once, that is, the pickling ones, which we suppose to be the small *Silver-skinned;* these, somehow or other, often start to grow soon after being housed, and, consequently, are spoiled for the purpose intended, therefore, when they are harvested, let them be at once secured in the pickle jar.

Shallots, being a much earlier bulb, will have been on their shelves some time ago, but they are ticklish things to keep in certain seasons and situations, often decaying almost wholesale. Perhaps the best remedy is an abundance of lime or chalk in the soil they grow in, but their propensity to "rot off" is so varied, as regards the position they grow in, and other things, that we cannot, with a certainty, warrant any particular situation as likely to be free from disease. That disease, however, has nothing of the Potato complaint in it, as they often flourish, and ripen their bulbs, seemingly plump and sound; and after being stored away, decay takes place to a sad extent. We have, at times, had the same misfortune with Potato Onions, a kind which is produced by the increase of bulbs that are planted. We suppose that both cases are examples of that law which so often visits on the offspring of diseased parents the accumulated maladies of some three or four generations; an evil from which, however, seedlings are in a great measure exempt. J. Robson.

ALLOTMENT FARMING.—September.

Potatoes.—We grieve to find that the opinion offered in a previous Allotment paper has proved but too correct: virulent is the disease, indeed. There is, perhaps, one slight solacing phase in which to view the matter, and that is the fact that the virus does not spread with equal rapidity in the foliage as on its first appearance: at least, in these parts. But then it commenced earlier, and the *root gangrene* has proceeded with, at least, equal rapidity to its first visits. This, to be sure, may be principally owing to the unusual accumulation of ground heat, consequent on such a continuous run of heat as we seldom experience. Besides this, the atmosphere, for weeks, has been in a highly electrical condition; and there can be little doubt that this subtle agent, which pervades all nature, plays a most important part in the vegetable kingdom. These things together, we do think will account for the virulent character the disease has assumed; we see no reason to despair, but rather incentives to renewed perseverance in the care of the seed. We are not aware that anything of a novel character, as to cure of the potato, has appeared; the disease has hitherto proceeded in defiance of all the arts of man; preventives alone, if there be such, can only, in the present state of things, be relied on. As for those gentlemen who, from one quarter or other, constantly brag of their ability to bid the disease utter defiance, and advertise their wares as

being pure as the driven snow, we can only observe that they smell rather strong of the shop; and it is just possible that their wares may be as immaculate as themselves. But why not people look sharp after their own seed potatoes? Who, that depends on this staple commodity for the chief sustenance of his family, and in his own person enjoys a dish of floury potatoes; who, of that caste, we say, but can secure a little seed before it is corrupted? But, some will say, they are not ripe enough! Well, admitted, for mere argument's sake; but behold the dilemma—unripe seed or diseased seed!

There is an awkward impression abroad as to the ripeness of seed. The potato is said to be simply an underground stem. Now, who would refuse to propagate from a cutting of a stem, merely because a little unripe in the ordinary acceptation of that term? Or, who would prefer a ripe diseased shoot to a partially ripe sound one? Judging by analogy, this appears to be the true position of the question.

Early planting, removal from the soil the moment the black spot shows itself in the stems, and a speedy drying,—even greening slightly,—together with the lowest possible temperature afterwards, and a total avoidance of fermentation, are, we believe, the necessary storing precautions. The seed should be taken the moment any one tuber can be found with the rot commencing; and if they are very unripe, our advice is to bury them in layers, after laying to dry for a day or two, in a mixture of dusty soil, quick-lime, and charcoal dust, well blended, placing layers of the potatoes and compost alternately, for nearly a foot in depth, on the floor of a dry shed or outhouse. Here they may lay for a fortnight, or so, when they may be taken out and spread thinly to green, either in-doors or out, only they must be preserved perfectly dry. We have an upstairs room over the fruit-stores, on the north side of the building, and here we keep our seed potatoes spread on the floor until November, when, if their room is required, we place them in a pit, putting layers of dry straw between the layers of potatoes; or, if the room is not required, they remain all the winter, which is the best plan, covering them through frosty weather, nearly a foot thick, with spoilt dry hay, or old litter. Thus managed, we rarely lose a potato; and in the spring, even as late as April, if any be left, they are as firm as when taken up, indeed, firmer, for they cut more like a sound carrot than a potato. Now, although we cannot boast like some of an entire freedom from the disease, we have it very light, as compared with many, but then we plant early, and take up early.

Root Crops in General.—But little cultural advice can be given as to these during this month; cleanliness is the main thing, both with regard to the present and succeeding crops. It has been a tiresome summer for weeds, but such seasons are by no means uncommon, and simply call for an increased degree of perseverance. It is rare that earnest labour goes unrewarded. If any allotment man or cottager is well-a-head with his work, and can spare time, he may dig down the centre, between root crops, with some advantage to the present crop, and a good deal to the succeeding one. The "bolters," or those mangold, carrots, &c., running to seed, must be pulled clear away from the rows, and used up; and any thinning which has been neglected, completed in the first week.

Carrots.—In some places these will be grubbed; if so, we advise what we generally practice, and that is, to pull them immediately, and to crop the ground with greens, or some of the cabbageworts, or sow it with a very early turnip: the Dutch will do well. It is not commonly known, that grubbed carrots, when the tap-root is gone, only become as hard as sticks by remaining in the ground, under the false idea of their still growing. The fact is, that they are losing instead of gaining; and the dread of unripeness is the cause of many a carrot crop being all but lost. What else can become of them, the tops perspiring until they flag? When drawn in this way, they should be immediately cut into the quick, and buried in damp sand or soil. We dare say that a soaking in lime-water, or brine, for a dozen hours before pitting, would destroy the grub left in them; or, it may be, water at a temperature of 120°, for a quarter-of-an-hour or so; indeed, the latter might be brine; we never tried it, but the thing is worth trial. These carrots will keep until Christmas; and it is to be hoped every good cultivator will have a later and luckier bed to succeed them.

Vacant Plots.—In such perilous times with the potato, it seems almost a farce to talk of vacant ground. To those who have any, we say, lose not a minute—get in some of the cabbage-worts, or sow quick-bulbing turnips. Let all decaying crops, even those of a doubtful or suspicious character, give way to something more certain. If the party possesses no plants of the cabbage-wort tribes, let them at once throw in some early turnip seed, if only to keep the weeds down, although the latter is but a narrow policy. If such turnips are not wanted at home, perhaps some civil farming neighbour will exchange potatoes or corn for them: such may be made a mutual accommodation.

Onions.—We have long since given advice as to the early harvesting of this crop, in order to get another crop off the same land this autumn. We can do no better than quote our own practice, and amount of success this season. Onions sown in three four-feet beds, each bed fifty yards long, in the second week of March; ground trenched thirty inches in depth, bringing up three inches of subsoil; no manure used, being in good heart from former manurings. In May thinned by hand at twice; no hoeing; ground rolled, when dry, solid nearly as a turnpike road; the onion blades perfectly erect, until pressed down last week—scarcely a blade down with storms; the beds thrown up nearly a foot above the ordinary level. A finer crop was never grown, and that, too, on land which only a few years since seldom or never produced a crop, five seasons out of six being carried by the grub. We attribute this to the trenching up some subsoil, and to hard rolling; this, with the absence of the small hoe—hand-weeding being substituted—the onions bid defiance to storms, which, by throwing down the crop in an early stage of growth, do immense damage. The height of the beds ensures an early harvest: our onions will be off in four or five days (Aug. 17), and a crop of turnips sown in drills, without digging or manuring. Onions require careful drying; it is well to dry them in large baskets, carrying them in-doors every evening. Afterwards, also, they should be kept very dry; they succeed well in an upstairs room, where there is generally a fire beneath.

Shallots keep best in a room with fire; we have seen them in excellent order, in March or April, suspended in a cabbage-net at one end of a warm kitchen, where they had hung all the winter. When we consider their native country, Palestine, there is no marvel in this.

Winter Greens: *the Cabbage-worts*, &c.—Again we refer to the severe visitation of the potato disease as an extra reason for securing plenty of useful greens, and high culture afterwards. Green kale may yet be planted; Savoys it is too late for; Coleworts, from a July sowing of early-hearting cabbages, may be planted in the first week, and if the soil is rich they will come in for Christmas. Those planted earlier will now require some culture, soiling them well up their stems. The young cabbage seed-beds, sown in the middle of August, must be clean weeded, and if the young plants look drawn, or sickly, some dry and loose earth may be strewn amongst them, an inch in depth. These young plants are much better pricked out, as gardeners term it, when about three inches in length.

General Cleaning and Burning.—The month of September offering, in our opinion, the best period in the whole year for making a general clearing of all plots, hedges, boundaries, &c., &c.; thus obtaining a lot of charred materials to carry out the cropping in the ensuing spring. The benefits derived from this ameliorator have been pointed out on all sides. Almost every cultivator of repute uses charcoal or charred materials. It is a capital improver on coarse soils, even as simply tending to correct the staple; but it has considerable chemical powers; the power of giving out carbonic acid to the roots of plants. There is still another point in which to view the matter: soils, with frequent cropping, become what practical men term "worn out;" that is to say, they refuse to produce certain crops in their original perfection, and engender the club-root, fingers and toes, &c., amongst the cabbageworts, with failures amongst other things, which appear to the ordinary observer as unaccountable. Burnt materials impart a freshness to the soil which mere manures cannot accomplish; and it must, at least, be admitted, that such materials, after the ordeal it has passed,

is entirely free from insect enemies. Let, then, every hedge be cut, every ditch or other boundary be scoured, all coarse herbage, turf, and all from lane-sides or commons, be at once collected in a convenient spot, and charred. Let it not be understood that we are urging a trespass: we only mean collect all that may be lawfully done. The centre of such a heap may be the coarsest materials, reserving turfy soils, or weedy materials, to close up the heap when half-burnt. It may smoulder for a day or two, and the charred materials, wood-ash, &c., is best preserved dry in some outhouse. Thus all weeds will be destroyed, insects, &c., and a most valuable material provided for spring cropping.

Autumn Cropping.—Little can be done this way: a raised bed, in a warm, dry, and sheltered situation, may be sowed in the first week with Bath Cos, Ady's Cos, and Hammersmith Lettuces, to stand the winter; it should be so placed as to receive a few hooped sticks to be covered with anything protective in hard weather. When the plants are well up a little charred dust may be strewed through their stems. Cabbages to stand where sown, thickly, may be sown at the same time. At the end of the month, or beginning of October, some of the Rhubarb intended for very early work may have the half-decayed leaves cut away, and receive a coating of littery dung nine inches deep, to shut in the ground-heat. This will produce nearly a month earlier than that untouched.

Onion Sowing.—Every one should provide a bed of autumn-sown onions to transplant in the spring; they are both useful and profitable. We use the Deptford, and sow in the middle of August. Those who have omitted, may yet sow in a warm corner on a raised bed.

Pigs.—During the next six weeks is perhaps the best time in the whole year to get forward a good store pig; especially in seasons when potatoes are much damaged. To enlarge on the benefits of a good hog to the cottager is quite needless; everybody knows and admits, that cottage economy is incomplete without one, and in country places, the man who does not raise a pig is considered within a short and easy stage of the poorhouse.

Much, however, depends on the labourer's wife as to getting a well-fed pig: unless she takes a *pride in the affair*, all will be in vain. A good manager this way will do wonders. Every potato peeling, every cabbage leaf, every quart of house leavings, bacon water, &c., is turned to account—that is to say, made into bacon. In pig feeding there is no greater error than to throw much vegetable matter in a reckless way into the pig-sty. Even a hog can only do with a given quantity in a given time, and more only serves to get the pig in a saucy state—treading under foot and wasting much of the food. Whenever pigs are thus "tended," it is the result of idleness or apathy; it is too much trouble to attend to their wants frequently. It is astonishing how well-attended alternations of thin, swill, and coarse vegetable refuse will get a pig on; and if not thus handled, the meal bill will be that much higher. In finishing a pig off for the butcher, there is nothing better than peas—whole peas—given between meals. Where, however, this is practised, plenty of thin swill should be provided, for the peas will make them thirsty, and, indeed, are intended so to do. Added to this—a dry and clean bed. There is an old saying in these parts, that "a good bed is half meat," and very true it is. How well this traditionary sort of practice meets modern and scientific views, as to the benefit of warmth to animals! We need do no more than point to it as a great fact. There is little occasion to bar the door against the rambling of hogs thus attended, they will be quite disposed to pass their time between eating, drinking, and sleeping. This is the way to make plenty of bacon in a little time.

Let us advise pig-keepers to believe that cleanliness answers as well with swine as with any other animal. Cleanliness and warmth are almost twin brothers. And yet there is something more than even warmth in the argument. Everybody knows that the skin of animals performs important functions. When a pig rubs himself roughly against a post or tree, some extraneous matters require to be dislodged. Piggy's want of philosophy is supplied by that intuitive kind of knowledge called instinct. Stoppage of the pores of the skin produce itching; itching drives the pig to rubbing, having no hands; and rubbing removes the scales of dirt, and the pores gain their liberty. Let every pig-sty, we say, be not only swept out, but *washed* down once a-week, at least.

R. Errington.

THE APIARIAN'S CALENDAR.—September.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide."

The Bee Season.—In this locality (Bury St. Edmunds) I am sorry to say the bee season has been a very bad one; indeed, unusually so. I have not myself obtained one really good glass of honey, nor have I heard of but one having been obtained by any other person, and the stocks, especially those that have swarmed, I fear, upon examination, will be found very deficient in store. Their attack upon the fruit, even so early as the cherries, was a pretty sure indication that little or nothing could be obtained by them from the usual sources, and they are now to be seen in large numbers both in the grocers' and confectioners' shops, where they die by hundreds in a day. This all tends to show that there is poverty at home, and that nothing can be obtained in the fields.

North Aspect.—The reports which I have received from persons who, at my recommendation, have placed their bees in a north aspect, are altogether in favour of it. The bees have worked more steadily, and swarmed quite as early, and the extremely hot weather at the beginning of July, which melted the combs, and even destroyed many newly-hived swarms that were placed in the south, did not at all affect them. One gentleman especially, in this neighbourhood, who at my suggestion removed all his bees to a north aspect, speaks of the advantages arising from it as very great indeed, and certainly he has obtained *more* honey, and of a finer quality, than any other person I have yet heard of this summer. Another writes to me, saying the advantages of a north aspect this summer have been immense. In winter we well know its advantages; the only doubtful period is the early spring, when a little sun induces the bees to leave their hives, but by a little good management any ill consequences likely to arise from it may be prevented.

Stock Hives.—It will be necessary to examine all the hives that are intended for stocks at the end of the month, and to make up by feeding each one that has less than eighteen or twenty pounds of honey to that weight, or to unite the bees to other stocks and take their honey. It will be found very troublesome, as well as expensive, to keep second, or even late prime swarms that are not made up to the above weight.

Stands.—The end of the month will be a good time to examine the pedestals upon which the stocks are placed, for it is not unusual to hear of a stock being destroyed by the pedestal decaying just below the surface of the earth, so that by a strong wind, or anything accidentally going against it, it is broken, and the combs by the fall so misplaced as to render the stock of little or no value.

POULTRY OF THE CALAISIS AND THE ARDRESIS.

(*Concluded from page* 325.)

Amidst all this utter confusion of the different races of fowls, I have in vain looked out for *any new or distinct breeds.* Traces of almost all the recognised varieties are abundant, and present themselves in obstinately marked family characters;—Gold-pencilled Hamburghs, Chitteprats, Cuckoos, Game Fowl, and even Rumkins, but not the least bit of novelty. The nearest approach to it are some *hens*, to be seen in various villages, of a peculiar colouring, which might be called Robin-red-breasts, and which look as if that feature might be made tolerably permanent, by careful breeding, if one could lay hands on exactly the right cock to suit them—for I have not seen this marking in any male bird. The tail, back, head, neck, and hackles, are pure white; the breast and fore-part of the belly, of a rusty red. This has a very droll effect; as when seen from behind, and when seen in front, they would hardly be taken to be the same birds.

The fowls of the Calaisis are undersized; for their

general appearance, imagine all the English breeds promiscuously bred on one establishment for the last fifty or a hundred years, and you have as clear an idea as it is possible to give of the inmates of a poultry-yard in the Pas-de-Calais. It is likely that the country has been repeatedly stocked from England. Some few game fowls look as if they had only come over the other day, so pure are they, though *combats des cogs* are strictly prohibited by the authorities, on the reasonable ground that they stir up strife among *work-people*, and induce them to spend money which they cannot afford to lose. The notion of cock-fighting amongst gentlemen does not seem to be a supposeable hypothesis. But it may be guessed that some hundreds of years ago, when our nobles made summer trips across the water to break a lance with the Frenchmen, and feast with them during such intervals when they did not happen to be cutting each other's throats,—many a page had in charge a few bags of cocks, to make sure of victory in one field, if it were lost in another.

The reverse of the fowls, the turkies are very pure, of the true black Norfolk breed. If a reimportation were required, the Calaisis is the place to supply it. They are abundant and cheap, and are much employed to hatch other birds besides those of their own species. They also travel to England in large numbers at the approach of Christmas.

The ancient town of Ardres enjoys, from the top of its half-ruinous fortifications, a very varied and charming prospect. The chalky downs surmounted by the dismantled chapel of St. Louis, the forest of Licques, and the forest of Guines, of which it is a continuation, embrace the famous field of the Cloth of Gold, now a fertile plain; the spot where stood Henry VIII's tent, or rather palace, is at this moment beautifully green with wheat. Swelling hills form an amphitheatre to the entire south and west. North and east is a large tract of marsh, partly belonging to the Calaisis, and stretching from St. Omer to the sea, formerly the estuary of the *Portus Itius*, but now silted up, and filled with turf and sediment. This tract consists of about half water and half dry land; that is to say, man has effected a sort of amicable arrangement between the elements, and, instead of a state of universal mud, there now exist, by virtue of the compromise, ditches, banks, canals, roads, ponds, meadows, streams, and garden-ground, reed beds and osier thickets. Herein are to be found multitudes of ducks, of two kinds,—one the quietest, the other the liveliest ducks in the world. The former are *wooden ducks*, stuck on little posts into the ponds, to attract the notice of passing wild fowl. The old song says, "A tailor's goose will never fly," nor swim either, it might have added; here are some ducks to match, in one respect of incapacity. The latter are the celebrated call ducks, or *canards de rappel*, the most frisky, quacking things conceivable, which now and then, on propitious nights, have the pleasure of being tied by the leg amongst their wooden brethren, in order to invite strangers to come and be shot at, from the subterranean and subaqueous huts which the French marksmen put together with reeds and sticks, and which might be taken for dens of some beast of the country; but the more inartificial they are, the better they are found to answer their purpose. Colonel Hawker has admirably detailed this process of hut-shooting, and, therefore, I shall only observe that the huts are often so close together that it might be expected these fortresses would blow each other up into the air, or down into the water, unless they minded what they were about. But perhaps Monsieur A. may send his compliments to Monsieur B. to know if he be about to shoot this evening, in which case he will take the liberty of deferring his own sport till the day after. Several huts, however, may belong to the same *chasseur*, to be used, not simultaneously, but turn about, as wind and weather shall direct. Few other than call ducks are reared; they are of wild colouring, and mostly very pure and pretty. If the reader have a pond near his house, and wish to drive away some nervous, unpleasant inmate by incessant clack, squeakings, and every noise of which a duck's vocal organs are capable, he has only to import *a couple* of family parties from the Calaisis or the Andresis, turn them both into the same piece of water, and in a week his work will be done. Both wild and tame ducks are, during their seasons, sold here at about fifty sous, or two shillings, the couple. Geese are not generally kept; everybody who can, tries to keep a cow, or a horse, or a donkey, or a goat, and the grass-eating birds would be somewhat in the way.

The immense number of fowls that swarm everywhere, receive very little attention, and are but rudely accommodated with hen-houses, &c.; but they are much under their owner's eye. The fine climate, and long summer which they enjoy may be one cause of their thriftiness. Caponising is generally practised.

It will surprise many, to be told that in this country, without hedge-rows, and small, scattered plantations, there is as much as is wanted of all game except pheasants; which are absent. The forests on the chalky hills are too dry for them, though there is abundant cover; but in spots bordering on the marshes they would do well, if preserved. Partridges are plentiful, and much cheaper than in England. The forests harbour hares and rabbits, which latter also frequent the sandy portions of the coast line. Snipes and woodcocks are a matter of course; occasionally there are large flocks of wild geese. The sportsman, who cares for other than pot luck, will find besides many interesting species which he rarely meets with at home. The variety of fish is immense; in addition to those usually found in *still* waters, including magnificent carp, which the French know how to cook, though we do not (the principal secret being to steep them a certain number of hours in a pickle of salt and vinegar, and other things), there are, within easy reach, *trout streams;* and, on the other hand, sea fish from the Channel and the North Sea. Dunkerque sends numerous vessels as far as Iceland, which stay out all summer, and return home laden with salt-fish, to be distributed during winter and spring throughout the neighbourhood. Last, and least, capital brown shrimps a sou a pint. Even during the depth of winter, eggs are scarcely half the price they are with us; so that, egg-sauce, and shrimp-sauce are seldom beyond reach.

I have noted as natural phenomena in the Calaisis and Andresis—March 31, house martins, though sharp frosts at night; April 19, snow; April 20, the nightingale; April 22, cuckoo; April 23, redstart; May 7, turtle dove; May 15, a grand flight of cockchafers; May 16, quails calling. The two last facts *may* have occurred earlier. May 17, at night, the first thunder-storm of spring. D.

WILD BEES.

By H. W. Newman, Esq.

"One of my boyhood's dearest loves wert thou,
Melodious rover of the summer bowers;
And never can I see, or hear thee now,
Without a fond remembrance of the hours
When youth had gardened life for me with flowers.

"Thou bringest to my mind the white thorn berry,
The blooming heath, and foxglove of the fells;
And strange though it appear,
Methinks, in every hum of thine, I hear
A breeze-born tinkling from the sweet blue bells."

T. Smibert.

HUMBLE BEES.

Introduction to some new remarks on the "Bombinatrices."

Although there have been several publications on this branch of natural history, the writer still ventures to submit to the public the observations he has made on four species of "Humble Bees." Having spent the leisure hours of four or five summers of his youth in this pursuit, he begs to quote the words of a very intelligent writer on the same subject, the Rev. W. Kirby, author of the "Monographia Apum Angliæ." "Much still remains incomplete, and many errors will require future correction; an account of any genus, perfect and elaborate in all its parts, must be the work of him who is versed in the history and economy of every individual that belongs to it; so much knowledge with respect to *every species and variety* is not to be expected from *one man;* the naturalist should combine the discoveries of others with his own, and concentrate the whole," &c., &c.

The following pages contain the habits and history *of four only* (selected from nearly twenty) of the largest species that live in communities, and gather honey; they inhabit all

parts of England and the continent. The writer has been induced, in consequence of some omissions made in former histories, to supply them for the use of the naturalist who can condescend to spend time in the pursuit of such studies, and his object is mainly to describe the extraordinary *habits of the drones*, or males of all the four species of Bombinatrices, which have come under his immediate notice and observation, and which have never been described by any former writer on the subject.

GENUS BOMBUS.

1st. Apis Lucorum.*

This is the most common and best known of the four species; it inhabits all parts of Great Britain and the Continent, but is more plentiful in the northern part of the kingdom than in the south; indeed, I have found, that in the southern and western counties, the nests do not contain so many inhabitants as even in the midland counties, probably owing to the scarcity or abundance of the *wild flowers*. The female may be seen in the spring, flying from flower to flower; she is much larger than the worker, and commences a nest by herself in the ground; sometimes she takes possession of some hole near, excavated by some reptile, but often it is made entirely by herself; in the latter case, her nest is not so apt to be destroyed by the field mouse, the most determined enemy to the wild bee. The queen and workers are so well known, that it is almost useless to describe them; but the *male* bee is very different, being of a bright buff colour, with a white abdomen, and is one of the most beautiful bees of the whole genus. These drones are very fond of the blossoms of the Salvia (puce-coloured), and the blue Veronica, a common 'spiral' flower, to be seen in almost every garden. Although the *Apis lucorum* appears the *first* in the spring, generally in the beginning of March, the males do not hatch or leave the nest until full a month later than some of the other species.

The whole *species* of *Apis lucorum* is subject to a disease from small lice, which fasten upon the head and trunk of the poor insect, and often eventually separate the trunk from the lower part of the body, and thus destroy the insect. It is a remarkable fact, that I have invariably found the queen, at *spring* time, more infested with these lice in the south, and south-west of England, than in Scotland, where my first acquaintance with their habits began.

I have read with much pleasure, Monsieur Reaumer's, and also Monsieur F. P. Huber's accounts of these insects, and very faithful ones they are, *as far as they go*. I cannot do better than copy a part of their history.

"This bee is well known in small woods and plantations, and makes its nest in holes in the ground. The females of this, as of all the other species, are largest in size, the males next, and the workers smallest. Early in spring, when the willows begin to appear in bloom, the female may be seen traversing the gardens by sunrise, with her usual sonorous booming, and busy in collecting honey and pollen from the catkins; the workers do not appear until a later period, and the drones not until late in the summer and autumn, when the thistles are in blossom, on the flowers of which they are found in great numbers. (The drones appear about the third week in July, or beginning of August, according to circumstances; if a hot summer, early; if wet, much later. I have noticed some as early as the 20th of July; and in 1847, I observed one three weeks earlier, *June*, 28th!!—H. W. N.) The *females* only, of all the former year's colony, have survived the winter, and now dispersing, each seeks a residence for herself, where she may become the foundress of a new community. Having pitched upon a convenient spot, the laborious insect proceeds first, to excavate the passage or gallery, then the nest itself, detaching the soil as it were, grain by grain. These excavations are situated often a foot under the surface. Having finished the excavation, and carpetted her new dwelling with soft leaves, &c., the insect proceeds to construct brood cells; the wax of which these are formed is secreted as in the domestic bee, in certain receptacles placed on each side of the middle process of the abdominal scales, and is extracted by the bee in the form of laminæ moulded to the shape of the insect's body; unlike the queen of the hive bee, the mother bee of this family possesses these wax-secreting organs, as well as the workers, and produces the substance in greater quantity than her progeny.

"The cells being prepared, the queen mother proceeds to lay her eggs, these are not fixed on one end, as with the hive bee, but are huddled together without any order; the mother guards the eggs carefully, as the workers (if any are hatched) are fond of destroying them the first eight or ten hours after they are laid; in four or five days, according to the temperature, the eggs are hatched. Males and females are bred *in the same cell*, and fed alike. (The meaning of this sentence is, that only *one at a time* is bred in the cell, but the *second* may be a *male*.—H. W. N.) The cells are frequently rent, but as often filled up by the workers. In fifteen days the bee arrives at its perfect state, its body is covered with down; it gnaws through the cell, assisted by its fellows, and in course of a quarter-of-an-hour, or half-an-hour, if *the weather be fine*, leaves its nest and goes into the fields in search of honey.* The cell which it leaves is soon filled with honey. As the bees increase in number, the mother bee relaxes in her labours. The inmates of a humble bee's nest are of three classes—females, males, and workers; the old female is alone in the spring; in May, the eggs which she has laid have been hatched, and produce *workers* only; the females and males of the community do not appear till later, *none* sooner than *June*, and the greatest number in July. Like the hive drone, they have no sting; *but they are exempted from the severe fate of the former, in escaping the cruel massacre to which those are doomed.* The workers are not all neuters; many of them breed in spring, copulate with the males in June, and lay eggs soon after, but only those of *males*. (This I have never seen or discovered. I never saw the wild bees in coitu, except about three or four times in forty years; these were about the end of August; and among the numerous nests which I have removed to my garden, containing many hundreds of bees, I never saw a *couple* together sooner than August.) These males fecundate those females which are reared towards the end of the season, but which do not begin to lay until the following spring, when they each lay the foundation of a new colony. At the approach of winter—that is, the first winter of their existence—the females, to the number of thirty or forty together, make a lodgement in or near the old nest, where they pass the torpid season in safety and quiet, until the return of spring awakes them to life and activity. The old mother, the males, and the workers, all perish before the cold season arrives." (*Reaumer, and P. Huber.*)

I will now notice a few particulars more; and the first is the labour of the queen mother at the commencement. As soon as she has formed two or three cells her labours are incessant, and I have watched her from the nest for the first fortnight. At this period she is seldom longer from the nest than from three to five minutes, no doubt to prevent the young brood-bee from getting chilled to death in its cell; only one bee is hatched at first, which immediately (after making great observations round) leaves the nest, and commences work. It is wonderful to see what observations a bee makes the first time it issues from the nest. It is about two minutes in particularly noticing the entrance, and all the objects near, returning many times before taking its final flight to work. The organ of *locality*, as *phrenologists* term it, is most strongly developed in all the genus of the Bombinatrices. It is the same with wasps, hornets, and hive bees. The queen now remains at home a longer time, and when some half-a-dozen bees are hatched, her journeys are very rare indeed. I should here remark, that the proof of these labours of the mother bee are much more easily ascertained with the *Apis muscorum*, in consequence of their easiness of access in the moss; and it is to this species of bee I am indebted for my first notice of the gradual labours of the queen mother.

(*To be continued.*)

* The *Apis lucorum* is very similar in appearance to one of its congeners, the *Apis terrestris*. The former has its nest generally in small dry open plantations in groves; the latter more in open fields, meadows, and pastures; and the male of the *terrestris* is the same colour as the worker. Their mode of nidification, and their choice of flowers and blossoms are precisely the same.

* The cells of the humble bee are never ceiled after being filled, like the hive bee, with honey.

THE CONTRAST.

Walking the other day in one of our public gardens, where the beds were systematically arranged, and the plants scientifically labelled, I accosted a young workman, with a rake in his hand, and asked him if he knew the name of a plant standing a short distance off. "No, I do not." "Do you know the name of that one yonder?" pointing to another. He confessed himself still at a loss. "Why, my friend," I remarked, "if I worked here, with the opportunities there are for improvement, I would learn the name of every plant in the garden." "Oh," rejoined he, "I know enough for the work I have to do, and that's sufficient for me." Now this self-contentedness, or stoical philosophy (if philosophy it may be called), is not exactly the condition of mind to carry a man well through life, or to prosper him in his vocation. That workman evidently stood in his own light, or, rather, in his own darkness, and in the way of another who would have gladly embraced his neglected advantages. Improvement attends not the man who is content with ignorance. He had not learnt the art of lightening labour by taking an interest in it; he worked mechanically, but not mentally, and to work without either head or heart is drudgery. Profit is said to be like corn shown to a hungry horse—it excites to action; and to obtain higher wages, a man must qualify himself to receive them. Pay, without merit, is not the world's policy. But labour has other wages, which are too often overlooked—I mean those wages resulting not from eye-service but from a principle of duty, which, if a man performs heartily, he shall receive here and hereafter.

On the same day it was my privilege to visit another garden, where the plants were mixed in the flower borders, and unlabelled, but arranged with the view to effect and continuance of bloom. "Are you fond of flowers, sir?" said the gardener, after I had addressed him. "Very," I replied. "We are not on the bedding system here," he continued. "I like to have flowers all the year round, and though the design is not obvious, yet our borders are so planted, that take any given space, say from three to six feet, according to the habits of the plants, and you will see spring, summer, autumn, and winter ones alternately placed, that some flower may be always in bloom." "But this," I remarked, "requires skill, and a knowledge of the characters of plants, and some may occasionally come to hand of which you are ignorant." "True," said he, "but that is not often the case, and when they do I soon acquire their history." In truth, I found this man perfectly master of his art, and among the extensive variety of plants cultivated in the garden (and it was large) there was not one but what he was intimately acquainted with its name, order, and class. Gardening was his hobby, and the plants his pets. He had books, and was fond of collecting new plants, for they were the means of extending his knowledge. I could but contrast the difference between this man and the former, and reflect on the larger amount of happiness which the latter enjoyed; in the one case labour was unalleviated, in the other, pleasure sweetened toil.—S. P., *Rushmere.*

CONFINING BEES.

An instance of the effects of confining bees, under circumstances somewhat similar to those related by B. B., has lately come under my observation. A very populous hive, which had not swarmed, requiring feeding in June, was inadvertently closed at the mouth. On being opened a few hours afterwards, in the evening, the bees rushed out, and a large cluster remained outside all night. Next day, about two hundred drones were brought out dead; no doubt they had been suffocated. Should any accident occur to a hive the poor drones are sure to be the first sufferers; they are as inferior in strength and endurance to the workers as the queen is superior. I assume B. B. did not see the drones *bullied,* but only carried away. Was a "Country Curate's" monster hive pressed for food when its drones were killed, June 1st? It was extraordinary the drones should have been destroyed when there was a certainty of young queens coming on. We can scarcely regard the bees as such speculators as to calculate on the resources of neighbouring hives.

The observation of a correspondent, that the "working bees will not kill a queen," applies, as he remarks, to those reared in the same family. I have seen the queen of a weak hive, which became the spoil of plunderers, furiously struggling with five or six workers, but I came too late to the rescue, one of them had planted its sting in her breast. Introducing a stranger queen into the centre of a hive, she was instantly seized, imprisoned, and smothered; the process occupied five hours. When at length she fell, the bees, missing her, surrounded and imprisoned their own queen in an impenetrable mass, from which she did not emerge till the intruder was carried dead out of the hive.

Would your correspondents recommend feeding with barley-sugar as available for cottagers, or when extensive feeding is requisite? I have supplied an apiary by the stone, without any risk of the bees being bedaubed, using honey, or the syrup, according to Mr. Golding's recipe in "The Shilling Bee-Book," and putting it into combs as he advises, or, in the case of a cottage hive, having a small wooden bowl, with a tube through it three inches long and three-quarters of an inch in diameter, the end of the tube being fixed into the hole at the top of the hive, and covering the syrup with a float of cork. All that is necessary is to give the syrup sparingly till the bees are accustomed to it, and a *taste* of honey at the first will invite them. Such a bowl costs fourpence; the tube could be put in for a trifle, and I have had the bees in the bowl by hundreds, enjoying all the advantages of "top feeding."—Investigator.

[Having expressed doubts as to the working bees employing their stings as a weapon in destroying their queen, we received the following note from "Investigator:"—"When I had separated the workers from the queen, I found a sting left in her breast. She exhibited the usual effects of the venom in a few minutes, becoming paralysed in the limbs. Huber relates an instance in some respects similar, but supposes the queen was stung by *accident.* I presume to differ on this point with the illustrious naturalist. Dr. Bevan relates an instance of a worker being stung by a queen. There is no doubt the workers destroy each other in this way; I have frequently observed it. Having placed a dish, on which there had been honey, near the apiary, it attracted bees from all the hives, and became the arena of a battle-field, where the combats were more than commonly furious. One bee had a sting left in the thorax between the wings, and died on the spot; two others, mutually vindictive, hooked the barbs of the two stings together, and thus remained prisoners. In the contentions which are seen at the mouth of the hive, it appears only those acting on self-defence employ their weapons; the intruders attempt to escape, sometimes being held prisoners till they deliver up the stolen property."]

POLAND *VERSUS* HAMBURGH FOWL.

The Pole fowl counts three varieties, the Black, with white tuft; the White, with black; and the Spangled (properly so called). The true-bred Pole may be known by the total absence of comb, a thickened lump of skin on the top of the head, from which springs a large tuft or crest of feathers, so large, indeed, as almost to blind the best birds; the beak is raised into a knob over the nostrils, different to any other breed; they are often muffled or bearded, in which case their wattles or gills are wanting, or very small; their feet are of a slaty lead colour, the nails and soles of the feet white, and of a large size, though some very pure bred birds will be found small on account of their being bred too much in-and-in, which also causes them to be delicate, otherwise I consider them as hardy as other poultry, and excellent layers, rarely wanting to sit. It seems to me a great pity they should be so scarce, as they are really a very handsome as well as productive variety of fowl.

The colour of the Black variety should be of a beautiful raven black, changing in different lights to purple or green, with the crest quite white; occasionally the cocks of this breed show a little white at the lower ends of the quill feathers of the tail, which, though it disfigures the bird, is not, I believe, considered any mark of bad breeding. The chickens, when hatched, show the tufts from the first; they are black, with white tufts and white breasts.

The White variety have just the reverse of plumage, the body being of a snowy white and the crest black. They are almost extinct with us, but I have heard are plentiful in Egypt. I have never seen but four specimens, the last, a very old hen, at St. Omer.

The Spangled are divided into two sub-varieties, termed Gold or Silver; the golden being a reddish-brown, and the silver a creamy-white; either of these mixed with black constitutes the ground colour, all the feathers being tipped with white, whence the term Spangled. (Since, however, they have become so very scarce, many other fowls, of quite different markings, have, improperly I consider, been called Spangles.)

Polands, from what information I can gain, appear to have been brought by the Spaniards from the East, by them taken into the Netherlands, and thence we have received them. Real good Poles are very scarce; dealers, through ignorance or otherwise, continually selling Hamburghs or mongrels for the pure breed, and prizes are sometimes given for birds as Poles which I should call Hamburghs, a description of which is necessary to guard persons against deception.

Hamburghs come from Germany, many coming direct from Hamburgh, from which circumstance they derive their name. They are tufted like the Pole, but the tuft is smaller, does not come so forward, and, consequently, leaves the eyes more exposed, and is fronted by a small comb of curious shape, generally consisting of a very small double comb, terminating in two sprouts or horns; they are destitute of the white spangles and white in the tuft; their colour is gold or silver, pheasanted, that is, the feathers of gold or silver are edged with a glossy black, resembling the breast feathers of a cock pheasant, and giving the bird a dotted or scaly appearance; they are also sometimes muffled, and are considered good layers. In my opinion they owe their origin to a cross between the Pole and the Dutch Every-day-layer, though some say they *can't*, or, perhaps, *won't*, see any difference.

These, and innumerable crosses between them and Poles, are plentiful, and are generally sold as Poles. I hope I have said sufficient to make it plain to those willing to learn, that there is a difference, and unless Pole fanciers are more particular, I fear Poles will become quite extinct before long, which is much to be regretted, as Poles are not only a beautiful variety, but first-rate layers, and excellent for the table. If agreeable, I will describe the Dutch Every-day-layer at a future time.—B. P. Brent, *Rose Cottage, Bessels Green, Sevenoaks.*

[We shall be obliged by any additional communication.—Ed. C. G.]

MASON'S HYGROMETER.

At page 233, of the present volume, I notice, that in answer to a correspondent, you say, "we cannot learn anything about Mason's Hygrometer." Allow me to inform you that it is founded on the principle of ascertaining the amount of vapour in the air, by noticing the degree of cold produced by evaporation. The method was first devised by Dr. Hutton. What title it has to be called "Mason's Hygrometer" I know not. It is a method of hygrometry that has been recently adopted by all meteorologists, and is usually designated by them as the "Wet and Dry Bulb." The instrument consists of two sensitive thermometers placed side by side; round the bulb of one a piece of fine muslin is tied with lamp cotton, and the ends of the cotton allowed to hang in a small vessel of water, which is suspended near them; the muslin is thus kept wet by capillary attraction; and the degree of cold being observed, which is called the temperature of evaporation, and compared with the temperature of the air, which is indicated by the dry bulb thermometer, the degree of humidity, the dew point, &c., are found by means of tables constructed for that purpose. These tables are to be had for half-a-crown, together with a description of the use of the wet and dry bulb thermometer, at Taylor's, Red Lion Court, Fleet-street; they are compiled by James Glaisher, Esq., Meteorological Observer at Greenwich.

The rationale of the instrument is best understood in this way. If we consider what would take place when the air is saturated with moisture—in this case the dry bulb thermometer would indicate exactly the same as that covered with the wet muslin. This state of things is often observed in a fog, or at night; but as the air becomes less moist, it will be easily conceived that the dry bulb thermometer will rise above the other—thus showing how far the air falls short of complete moist saturation. Tables are necessary to ascertain the exact amount of vapour in the air, because the capacity of the air for moisture varies with its temperature; but let no reader be dismayed at the idea of tables, they are no more formidable than the columns of a ready reckoner, which are just what the said tables are in hygrometry instead of £ *s. d.*

The instruments that are sold by the best makers for accurate meteorological observations are expensive; but, as I think, in these days, no one who pretends to scientific gardening ought to be without the means of telling, by some surer indicator than his bodily feelings, the state of the air which his plants enjoy (or *suffer*), I shall state, as briefly as I can, how this kind of hygrometer can be made at a moderate expense.

As every greenhouse, or place for plants, has one thermometer already, the extra expense incurred, in order to have this useful instrument, is only that of another thermometer. The companion thermometers should correspond as accurately as possible in different parts of the scale, and should be selected on this principle. The comparison will be best effected by placing them in water about 90° Fahrenheit, and allowing them to remain in the water whilst it gradually cools. It will be easily ascertained then, out of a number, which pairs are the fittest associates. The ordinary thermometer with the box-wood scale must then be prepared, by cutting off so much at the bottom of the scale as will allow the bulb to project beyond it at least half-an-inch. The tubes, of course, must be taken out whilst the operation is performed: let the two then be fastened side by side to a small board, about three inches apart; the lower edge of the board should not come below the scales. It is essential to accuracy that the bulbs should be left thus free, on all sides, to the air, and to protect the thermometer from breaking, let the board be fixed in a frame which should reach at least three inches below the bulbs. The frame should be not less than two inches deep from back to front, and the thermometers, on their board, should be fixed half-way between the back and front. One of the thermometers may then be prepared by tying a piece of muslin neatly round its bulb with a thread of lamp cotton, and the ends of the cotton dipped in a small glass suspended from the side of the frame; the surface of the water in the glass should be about even with the bulb, or a little below it. If above it, the bulb will be flooded, and the result of the observation will be false. The muslin should be just so wet as to moisten the finger when applied to it. The cotton will act better if previously soaked in a solution of soda.

I wish I could persuade all gardeners to set to work with these instruments; they are nearly all-but necessary for the regulation of greenhouses and hothouses, and out-of-doors. I feel sure that many striking and useful truths might be recorded of the varying degrees of humidity of the air, in contact with different soils, at the different seasons. Every gardener is something of a meteorologist per force, and I would have him an intelligent one, not trusting to the indications of his bodily feelings, but those of scientific instruments, many of which are now so cheap as to be within reach of almost every one; and very large proprietors might well insist on a register of meteorological phenomena being kept, which, in due time, might become of great value to science.—Sigma.

ON CLASS FORTY AT THE BIRMINGHAM POULTRY SHOW.

Class 40, at the Birmingham and Midland Counties Exhibition of Poultry in 1851 (Class 46 of 1852), will be remembered by lovers of rare and curious specimens, as offering prizes (the catalogue having previously enumerated all well-known sorts) "for any other distinct variety." It is to be

hoped that many owners of fowls which are little known will remember the existence of this class, and will, when the occurrence or recurrence of exhibitions shall offer the opportunity, favor fellow-amateurs and others with a sight of their rarities.

There are, doubtless, many handsome and profitable kinds of poultry in different parts of the world which are almost unknown and unnoticed in England. In America, I am told, there are good and beautiful kinds; in Russia, there are some which are so much valued there, that it is almost impossible for strangers to obtain them; and in Turkey, the *Cochin-China* were known and highly prized while still strangers here, having passed into that country by way of Asia. A few years back, while the Cochin-China fowls were yet unknown to me, and after I had met with only disappointment in an endeavour to discover in the Spanish the good qualities often attributed to them, I was told of some fowls to be found in Turkey, possessing size and other good qualities in great perfection, and I, of course, became immediately very anxious to buy some of these rare birds. Several of our friends, at that time living in Constantinople, and *their* friends, kindly placed themselves in full pursuit of these wonderful fowls, but without success, and we were, after some time, obliged to give up the idea of having them. Last year, one of our Constantinople friends came to London to see our Exhibition, and on his return, I sent by him a Cochin-China cockerel and two pullets, as a present to his father. During the voyage, many persons from the different ports came on board to see these wonderfully large fowls with a strange, unearthly crow, and on the arrival of the ship at Constantinople, it was found that these were the very same fowls which I had been so anxious to obtain from Turkey; which had, however, become very scarce there, and which, if ever sold at all, were only to be purchased for an enormous price. As another proof of the productiveness of the Cochin-China fowls (if, now that they are so well known, another proof can be needful), I must mention that these pullets continued to lay eggs throughout the voyage, in spite of weather so tempestuous that it was difficult for the captain to save them from being drowned in their coop.

About eight years ago, a young sailor, who had served in our family before he went to sea, brought me a fowl from the Cape of Good Hope, of a kind which I have never seen since. He (for it was a cock bird) was entirely jet black, with long scarlet wattles, and a very full rose comb; the shape of his head and his neck were Malay-like, and his tail drooping. He was very upright in carriage, and so tall that he looked tall by the side of a fine Spanish cock. He was certainly very handsome; of his other good qualities I had little opportunity of judging, for very soon after I had him, he and his rival, the Spanish cock, got together and fought, although we had fancied them securely separated, and *both* ultimately died from the injuries which they then received. I never but once saw a bird like him, and that I have always thought must have been brought over at the same time; for the same sailor had two cocks with him in that voyage. This second bird, I saw exhibited at a poultry exhibition, in the Zoological Gardens, Regent's Park: he was mated with hens very unlike himself, and the coop was labelled "Crow birds."

The curiously-shaped, and, I think, curiously ugly *Rumpless fowl* is shown in this fortieth class of the Birmingham Show; with regard to the ugliness, however, one opinion is no rule, for I, who think the Cochin-Chinas very pretty, have heard *them* pronounced "curiously ugly," because, poor things, they have no tails, and I should be sorry to depreciate anyones favourites. The Rumpkin, rumpless, or tailless fowls are little known, and to be met with but rarely; they are said, by some who have tried them, to be good layers, good mothers, and good birds for the table. The entire absence of tail gives a curious shortness to their form, they have an upright gait and a somewhat heavy look about the head; those which I have seen have been dark in color and with rose combs. Richardson gives but an indifferent character of these birds, and one rather at variance with the above, for he says they neither possess good flesh nor afford good eggs.

The equally curious, and, I believe, equally unpopular, *Silk fowl* is also shown in this class. It is rather larger than the bantam; the plumage, from the texture of which it is named, is more like silky hair than feathers; in color it is white or cream color, and it has a rose comb of a somewhat dusky color. The egg is white, and as small as that of the bantam.

Many other sorts take their station here. The *Frizzled*, or frightened hen, with her fantastic appearance: the splendidly-plumaged, elegantly-formed, *Jungle cock*—so difficult to mate: the *Spangled Spanish*, which I know I have wrongly named, and which should by rights take place among its countrymen—the Spanish: the long-known, long-familiar, *Cuckoo fowl*, and fowls from many English counties, some of which may be as deserving of notice as the better known and much admired Dorking. Anster Bonn.

THE DOMESTIC PIGEON.

(*Continued from page* 280.)

The inconveniences of not allowing Pigeons to rear their Young.—The reader has seen in what manner pigeons disgorge into the beak of their young ones a kind of pap, which has a great analogy with the milk of quadrupeds. If we deprive a quadruped of its young as soon as these are born, the milk, not finding its natural passage, causes such disorder there that is frequently followed by very serious consequences. If we deprive pigeons of their young, the liquid pap which they should give them, not finding any issue, causes such disorder that it is quickly followed by death, unless an immediate remedy is resorted to. Generally, when pigeons cannot feed their young, either from their having set on clear eggs, or their young ones having died in the shell, or been taken from them soon after their birth, we soon perceive the symptoms of this complaint, by their constrained and singular movements, plainly indicating uneasiness in every part of their body. Indigestions immediately follow, then a cutaneous eruption suddenly covers the whole skin with a kind of itch or scab, which is improperly called *the leprosy*. Sometimes this eruption is not general, but comes out in different parts, and forms deposites very dangerous, and frequently incurable. These deposites first appear in the shape of small, round tumours, enclosing a yellowish mattery liquid; the tumour increases rapidly, and sometimes becomes as large as a small nut. The humour it encloses hardens, and has the consistency and appearance of the yolk of a hard-boiled egg, and implants itself in the muscles as if it had taken root there: the disease quickly increases, the animal lingers some time, and dies if not operated upon. If the deposites are inward, every assistance is useless. There are two ways of treatment existing to cure this complaint; the first is always the best, because it at once arrests the progress. It consists in giving the pigeons that have no brood a young strange pigeon to feed. This substitution must be made cautiously in the night, during their sleep; for if they perceive it, very possibly, instead of taking care of it, and bringing it up, they throw it out of the nest after having killed it. This generally happens when they have two given them, therefore, we must take the precaution of only giving them one; first, for this reason, and secondly, not to run the risk of the pair from which the young are taken being attacked with the same disease we would cure in the others. It is not always indispensable to give them a young one born the same day that their incubation should have finished; it might be one or two days older, as that would have no influence on their way of receiving it. If we have no young pigeons for them to adopt, it will be necessary to try another treatment. We must take them from the dovecote, and place them in a separate apartment, or breeding cage. There we must condemn them to a rigorous diet; to be continued as long as we can feel with the finger a hard substance, or swelling at the bottom of their throat, occasioned by the inflammation and tumefaction of the lacteal glands. During this time of abstinence, we must give them water to drink, with a few drops of vinegar in it. If the disease has made progress, and the deposit appears in the shape of a tumour, we should open it with a sharp instrument, extract the matter, and burn the surface of the wound with caustic. Some persons content themselves by eating it off with salt; but this is a much slower method, and the

bird suffers more. It sometimes happens that the young pigeons die at the expiration of a few days; in this case, the parents are still liable to this complaint. The amateur must watch them then with as much care as if they had nourished them for a shorter time.

(*To be continued.*)

DOMESTIC PIGEONS.

TWENTY-FOURTH RACE.

Swiss Pigeon (*Columba Helvetiæ*).—It is about the size of the Stockdove, and as light; its beak is thin; it has no filament round the eyes; the plumage is generally streaked with red, blue, or yellow, on a white ground; it frequently has one or two rings, and a breastpiece of a brown-red, and two ribbons on the wings, the same colour as the breastpiece. Pure specimens are become very rare, because it has been blended with the Carriers and Tumblers. It is only by means of art and patience that we have been able to recover them by crossing different varieties among themselves, or with Mixtures of a rich colour. The common Swiss pigeon, and the One-coloured Swiss pigeon only differ from the English Tumbler in having a much longer beak and no streaks on their plumage.

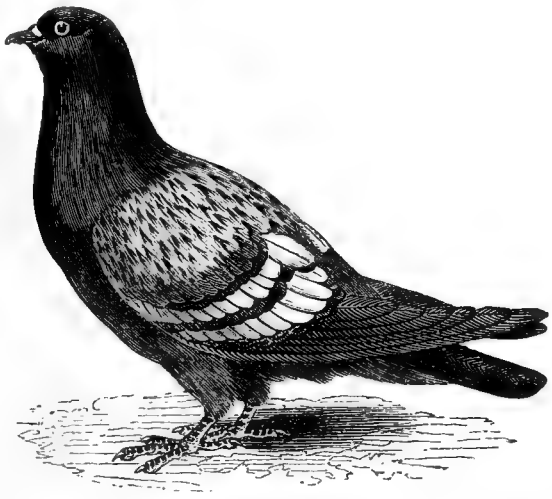
Common Swiss Pigeon (*Columba Helvetiæ vulgaris*).—The eye with a golden iris; the plumage partaking of all the colours mentioned above; a necklace and breastpiece of a brownish-red; wings barred, not streaked, and the same colour as the body.

One-coloured Swiss Pigeon (*Columba Helvetiæ unicolor*).—This has no necklace or breastpiece; it is slate-coloured, and the whole body is of the same colour.

Golden-collared Swiss Pigeon (*Columba Helvetiæ torquata inaurata*).—These beautiful birds have a bluish head; the neck and breast of a brilliant metallic yellow; the back inclined to yellow, but spotted with grey; the wing and tail bluish.

Orange-streaked Swiss Pigeon (*Columba Helvetiæ lineata aurea*).—The eye with a black iris; back and neck of a clear blue; breast of a reddish-brown; two orange-coloured bars extending like a ribbon across the wings, the bottoms of which are white. It is very productive.

Golden-spotted Swiss Pigeon (*Columba Helvetiæ badia*



aurata).—The plumage is blue; the flight and tail of a blackish-blue. There are some inclined to yellow, and have the breast twice gilt, or else they have the back of a light mahogany colour, and the breast of a golden brown, with a slight breastpiece more clear. Others have the back of a dull mahogany colour; the neck and breast of a beautiful changeable colour, approaching, says M. Vieillot, a plum colour or violet-brown.

White-marbled Swiss Pigeon (*Columba Helvetiæ alba mustellata*).—This breed, which is more rare and handsome than the preceding, differs from it in its cloak, and the upper part of its wings, which are inclined to white, with brown marblings, which does not produce a more agreeable effect.

Blue Swiss Pigeon (*Columba Helvetiæ cæruleata*).—This very much resembles the One-coloured Swiss, but it is slate-coloured, inclining much more to blue. It frequently has two ribbons on its wings, the same shade as the necklace and breastpiece. These five last varieties are the most brilliant in colour that can be found in all the vast tribe of pigeons.

(*To be continued.*)

HOLLYHOCK SEED.

I would offer, for the benefit of the purchasers, as a useful hint to those parties who save Hollyhock seed for sale, not to mix the seeds of the different sorts. How are parties to plant out their seedlings with any degree of taste when they are so mixed? By being mixed, perhaps, just where you want a variety of colour, there you may have three or four of the same tint. Let the seedsmen put the different sorts in different packets, and mark them with their true names. We shall then not only see that we have been treated fairly, but avoid a great amount of ignorance when we are asked their names, and do not know them.—S. Day.

[It is desirable that the seeds saved from varieties of the same colour should be kept by themselves, because the chances are that the colour of the parent will prevail in the seedlings raised from it. Our correspondent, however, must be aware that cross impregnations, and the sporting habit of the flower, will forbid any certainty being attained as to the colour that will appear in the seedling flowers.—Ed. C. G.]

DORKINGS—PREFERENCE OF VARIETIES.

The intelligent correspondence of Mr. Wingfield, and "Gallus," has much interested me. In reply to the query of "Gallus," I beg to state, that although my Dorking fowls are highly bred, and handsome birds of their class, they have not been "bred in and in," and yet this year, three-fourths of the progeny are deficient of the fifth claw. Some of the birds had *six* claws on one foot, and four on the other; many had only four claws on each foot; but still more had five claws on one foot, and four on the other.

With respect to the controversy, as to which is the more profitable breed, I think it mainly depends on two circumstances.

First. As to the *quality* of the special kind kept. And

Secondly. As to whether eggs or chickens are in greatest demand in the neighbourhood in which the poultry-keeper resides. Thus, in my own case, the Dorking fowls lay *very much larger* eggs than the Spanish fowl; the Dorking eggs weighing upwards of three ounces, the Spanish not more than 2¾ ounces, and frequently not so heavy; and as this is not a general law, I infer that the Spanish are of inferior character, although possessing the external characteristics of their breed in perfection—such as very white faces, large, deeply-indented combs, and plumage of raven blackness. The Dorkings are first-rate birds of their class, weighing as much as many Cochin-Chinas.

The Spanish have laid eggs daily, since January last, without wanting to sit; on the other hand, the Dorking chickens grow rapidly, are soon ready for the table, and *when there*, outvie the whole race of Cochins, Malays, Spanish, Poland, or any other breed.

Individually, I am simply an amateur of poultry, having in separate yards, at this moment, Game, Spanish, Dorking, Silver-spangled Hamburghs, and black Bantams; but I do not hesitate to declare, that for purposes of general profit to the farmer, the brown-speckled Dorking, is, as yet, *unapproachable*.

I trust, however, that this assertion will be leniently dealt with by your able correspondent, Anster Bonn; if otherwise, so be it, for I cannot but think that your friend "Thomas," truthfully represented the "Cochins," when he said—"They eats too much, lays too small eggs; . . . . and folks don't like eating these fowls; they say they are like parrots." Another great defect, in this climate, is, that they are so long without feathers; for the first ten or twelve weeks of their existence they make one shiver, from the combined effect of their ugliness and destitution.—J. Hitchman, M.D., *Mickleover, near Derby.*

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of The Cottage Gardener. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener*, 2, *Amen Corner, Paternoster Row, London.*"

Spur-pruning (*A. C——, Devon*).—Mr. Errington will in due time say more about spur-pruning; at present other matters of equal import press. The original spur shoots will remain permanently for many years, and will enlarge into huge excrescences, resembling an old osier stool, after a few years. Judicious stopping will not cause the embryo buds to start; injudicious stopping sometimes does so. Pray study our papers; you will find we have written guardedly. Why do you not introduce those planted last winter, to ripen their wood? White Muscadine, Black Prince, and Black Hambro', would do out in a Devon climate. Black Prince is a good house grape, so is White Frontignan, Esperione we have not grown, but it is spoken pretty well of. Overbearing will ruin any vines, if persisted in. You will see in back Nos. how to treat them; it is not simply a question of vigour, but rather of glass surface; in other words, of light.

Bees.—*B. B.* writes thus:—"I will now proceed to give you further information relative to stock No. 3. On the 17th day from its swarming a few drones were perceived, as if the wholesale slaughter, to which I before alluded, had been stayed by the presumed requirements of the case, for on the 20th day hissing was heard, and on the 21st the young queen was thrown out. Stock No. 8, I treated similarly; it piped on the 12th day, and on the 13th the young queen was thrown out. Stocks No. 2 and 13, have not proceeded so satisfactorily. Concluding the bees had become lazy, for they do seem to have fits of indolence, I turned them up on the 30th July, about six weeks from their swarming, and took from each about 4 lbs. of comb; neither of them contained many bees, and no brood could be discovered, and perceiving, on the 5th of August, that No. 13 did not work, I took it up, but did not find a *particle* of honey or brood, and no queen; the half-pound of bees I gave to No. 2. How do you account for the ill-success of the plan in these two instances? Do you not think the shortness of drones—several of my hives besides these four began to kill their drones early in June—in the apiary, may have been the cause, as it seems evident the queens had not began to breed. I shall be curious to know the result of No. 2, and shall be obliged by your informing me how to proceed. I ought to remark, that at the time of my depriving No. 2 and 13, some drones were found in each, but may not have been out of the hive, and, therefore, useless to the queen. No. 13 gave me, 19th of June, a swarm of 4¼ lbs. No. 2 gave me, 3rd of July, a swarm of 4 lbs. Last year it was suggested that your bee-keeping correspondents should send particulars of the honey taken from stocks, and swarms, and upon what system procured. I trust you will call upon them for such, and if some kind of register was kept, an idea may be formed of the goodness or otherwise of the seasons. I have heard persons call this a good season; I have not found it so. My hives are much lighter this year than they were this time last year, and have been losing on the average since 12th July; on 23rd June, most of them were as light as on 23rd April; from 23rd June to 30th June, there was a slight increase, and during the first twelve days of July the hives increased, on the average, at the rate of three-quarters-of-a-pound per day, but these same hives have since been retrograding at nearly the rate of half-a-pound per week. Only stocks that were literally crammed with bees, from three to four hives, have given any glasses, and out of seventeen hives, I have not five of weight sufficient to stand the winter. I shall be gratified to know how my brother bee-keepers have fared. Can you name to me any safe and more easy method of preparing the wax than the common one, in a cloth strainer? Dr. Bevan speaks of a vessel, but gives no dimensions, and the difficulty I find is in separating it from the dross, which I am told can only be done by some chemical process. Can you inform me what this process is?" ["I am puzzled to account for '*B. B.'s*' failure in the instance of his stocks, 2 and 13. I am decidedly of opinion that the massacre of the drones had nothing to do with it. May not the wet and windy weather we had in June have had something to do with it? I myself have lost a stock in the same way, which puzzled me exceedingly, as there was no queen found in it after the lapse of six weeks from the time the swarm issued. I can only account for it by supposing that some accident must have befallen the young queen when on an excursion from home in search of the drones, for the hive was very full of bees *and drones*, and on a careful examination of the hive, I found a large and most perfect royal cell, with the lid still attached to it, and fresh gnawed, evidently showing that a young queen of *large size* had not long issued from it. I remember observing, some time ago, how unfortunate the season had been for any successful trial of experiments. I quite agree with *B. B.*, that the season, on the whole, has been a very bad one. 'Tis true the hives 'looked up' a bit in the first half of July, so that I was privileged to take about 12 lbs. of beautiful honey-comb, in a super from one of my April artificial swarms, and expect to take about as much from two other hives, but what is this as the result of a whole season. None but the very strongest hives (in respect to population) will in *most places* have stored more than enough honey for their winter's supply, and I anticipate many a sad tale of failed and failing stocks next spring. Reverting to your correspondent's mishap, on reflection, it has occurred to me, that when a swarm has issued, and been located for a few hours in the old stock's place, it would be well to examine the latter, which may very easily be done, as but a comparatively small number of bees will then remain in it. Blow (through a veil of course) among the combs, which will drive the bees up, and then see if there be a good deal of *ceiled* brood in the combs. The more the better; but if there should chance to be but little *ceiled up*, there might be some danger of failure from a subsequent deficiency of population. In this case the swarm had better be removed elsewhere, and the old stock returned to its place. Will this explain *B. B.'s* failure? I see a correspondent, who signs himself 'J. W.,' in your number for the 5th of August, in answering 'Doncaster,' of the 'safe practice' of 'removing the old stock, and putting the new swarm in its place,' adds, 'I *generally* do it, and to advantage.' May I ask him how long he has known of this plan, which, perhaps, though a recent discovery of *my own*, may have been known to Methuselah, and be 'as old as the hills' after all? It is written—'*There is nothing new under the sun.*' We should be greatly obliged to him for some details of the *results* of this mode of treating hives, in comparison with those of other systems.—A Country Curate."]

Rees: Fumigating, &c.—*Cymro* says—"A friend of mine has three hives of bees, which he intended to stifle with brimstone, but has agreed to let me have the bees, and to empty the hive in what way I think proper, but objects to driving them, because the (straw) hive will be turned upside down, and fears the loss of honey from unsealed combs; and again, the bees may not take to the upper box. My present intention is to fumigate them with *Racodium cellare*, on their own hive boards; but I am at a loss to know how much smoke I may put in, or how long I am to blow through the fumigating box, and how long to let the smoke remain in the hive. I do not want to carry it too far, only sufficient to prevent them from flying or crawling about; and I want to unite the three hives in one, and let the three queens fight it out. What sized hive would be required to hold that quantity (the present hives are straw ones of the usual size, and were supplied with good swarms)? I am of opinion that one eighteen inches square inside, by ten inches deep, would not be too large. What think you? I have in my possession a swarm that was hived on the 14th of July; it is an old straw hive, and the person from whom I had it put a stick through the top hole, which prevents me from putting a glass of any description on the top; therefore I cannot feed them (when required) by the top hole. Now, I wish to make them quit their present residence, and take to a wooden bar-hive. If I placed this straw one on the box, would they leave the upper, and build comb in the box, and let them enter through the lower hive board, and stop up the straw one? Would the same object be obtained by placing the new hive beside the old one, and let them enter that way? Would it be better to hive the three lots separate, until they recover themselves, for a day or so, then let them unite by placing the three boxes one on another, when altogether upon the fourth box underneath, and let them unite that way, and have but one entrance at the bottom?" ["It is a pity 'Cymro's' friend will not let him *drive* the bees from his three stocks. There need be no fear of loss of honey running out at this period of the year; no combs actually *unceiled* can be so full of honey as to create *that* danger. However, if it cannot so be, 'Cymro' must fumigate as he proposes. His plan of fumigating the bees *on their stand* is not good. I have had experience of it. My present plan of conducting this operation is to turn a suitably-sized common hive bottom upwards in a pail. In the top (that is, *bottom* now) I stick a small flour-dredger (with a lid on), pierced all over, top and bottom, with innumerable holes. It is rivetted to an iron spike about three or four inches long, which pierces into the straw, and makes it stand upright. Next fill the dredger with a good-sized bit of fungus, well-lighted, and when it smokes cheerily set the full hive quickly over it, and bind a cloth round to prevent the smoke from escaping. If it acts, there will soon be a famous *din* among the bees, then a profound silence, succeeded by a noise of *hailing* bees. Wait some fifteen minutes, and then lift off the upper hive. All three hives may be set over the fumigator at the same time, one after another, and be so united together at once without further trouble. But let 'Cymro' take care to provide them with a queen, for queens are very difficult to dislodge by merely fumigating. Should the fungus go out, it may be renewed as often as necessary. 'Cymro's' hive, eighteen inches square and ten inches deep, is *twice too large* for a stock to be reared *now* by artificial means. His swarm of the 14th of July will *not* descend into a box put under them to work comb this year, neither will they enter one put at the side.—A Country Curate."]

Ranunculuses (*Reginald Forbes*).—Mr. Groom, Florist, Clapham Rise, recommends you the following:—Amours, 1s.; Aschan, 2s.; Constantia, 2s.; Penzance, 2s. 6d.; Faunus, 2s.; Le Temeraire, 1s.; Alphonso, 1s.; Achilles, 1s.; Prince of Wales, 2s. 6d. You propose planting scarlet and white Turbans as an edging to the named sorts, but you will not produce a good effect by so doing, as the Turbans should be planted in the autumn, and are generally in flower before the others, which most persons plant in the spring. Most of the *Auriculas* you mention are now out of cultivation near London, those obtainable, and a few others, are among the following:—Grime's *Privateer*, 3s. 6d.; Oliver's *Lovely Ann*, 3s. 6d.; Pollett's *Highland Boy*, 3s. 6d.; Stretch's *Emperor Alexander*, 5s.; Taylor's *Glory*, 5s. In our *Calendars*, *b.* means beginning of the month; *m.* the middle; and *e.* the end.

Foulstone's Budding Facilitator (*Gallina*).—We cannot give you the maker's direction; we have applied ourselves, but can obtain no reply.

Goslings (*Ibid*).—Our correspondent says:—"The weight of *Gallus's* goslings is exceedingly good, as given in your paper of the 12th instant. Mr. Parker's three goslings, sent to the Show at Lewes, weighed, at fourteen weeks old, 42½ lbs. They left home on Monday morning at half-past two, A.M., and did not arrive in Sussex till the evening of the same day. It was very hot weather, which, combined with a journey of between two and three hundred miles, and being knocked about from one station to another, to say nothing of being closely cooped up between fifty and sixty hours before they were weighed, for the Judges did not weigh them till the Wednesday morning (the day on which they were to inspect the poultry), all naturally tended to their losing weight, which accounts for their only weighing 40 lbs. on that morning."

Forcing Cucumbers (*J. T.*).—We, like you, have heard of the marvellous production of this fruit in three weeks from the seed, but we never saw it done, neither did our many gardener friends whom we have enquired of. The fact is this, seeds of good early-bearing cucumbers, sown the beginning of May, in a strong, growing heat, and afterwards skilfully attended to, will perhaps produce a fruit of fair table size in five or six weeks from the time of sowing. But what of that? Cucumbers are as plentiful as potatoes then, and what is accomplished in May could not be done in mid-winter. For frame purposes you will find *Cuthill's Black Spine* possessing as many good points as any we know of, including hardihood, fruitfulness, and good eating quality. The *Roman*

Emperor is likewise good, and so is the *Syon House*, but neither of them better than the first named.

Very Early Cucumbers (*A. Q.*).—You cannot well carry cucumbers through the winter in an ordinary dung-heated frame. Fire-heat is necessary in some shape for such a purpose; you had better, therefore, continue those you have in bearing as long as you can, and then appropriate your frame to something else until the beginning of January. You may then sow your seed in a newly prepared bed, which maintain at a steady heat of 70°. The *Syon House* variety is the best for winter use, but some of the *Black Spine* varieties keep better after they are cut, which is important when that is wanted. *Mill's Jewess*, besides those already mentioned, is an excellent fruit, and generally esteemed for its appearance and other good qualities.

Early Potatoes (*Ibid*).—The only way you can now obtain anything like new potatoes at Christmas is to plant tubers of last year on some dry border. These, by being kept, will have lost much of their vitality, yet sufficient may remain to support a young brood until they be half grown, when they appear, but seldom taste, like "young potatoes." As you mention having outhouses, they may be planted there, provided there is an open side for light; we have known it done in a cellar, but the produce was never satisfactory. As you mention growing them for profit, why not try *Mushrooms* instead? With a warm cellar and outhouses, and as we suppose you to have horse-dung, your chances of a remunerative crop is much more likely that way than with potatoes or cucumbers.

Carriage of Eggs.—Mr. Marshall, of Durham, says:—"In May last, I purchased of Mr. Punchard a pair of splendid Cochin Chinas, but, to my astonishment, the hen went constantly to the nest to lay, but evidently was unfruitful, as no eggs made their appearance; consequently I wrote to Mr. Punchard, asking him the cause, and he very generously informed me that he had heard of similar instances (although rare), and offered to send me another hen in lieu of her, or a hatching of eggs; the latter I accepted, and he kindly sent me twenty-six eggs, carefully packed in bran, which arrived safe all but one. These I put under two nurse hens, on peat-turf nests, and they produced twenty-four chickens, all of which are doing well, and will weigh at this time about three pounds each. What is very remarkable, the barren hen began to sit about six weeks ago, and my gardener's wife put a hatching of Shanghai China eggs from a bird sent to me last year by Blake, of Gosport, and the cockerel sent by Mr. Punchard, and she now has a fine brood of twelve chickens, and nursing them with the same assiduity as the very best breeding hens. Mr. Punchard's conduct gives confidence to future dealings, and contrast with that of some dealers in florticultural productions that are puffed off and sold for high prices, and prove worthless; yet I am happy to say there are exceptions, for Mr. Chaters, of Saffron Walden's new hollyhocks are now blooming in my gardens most satisfactory, and well worth the money I paid for them."

Abies, its derivation.—*Sigma* has much obliged us by the following note:—"In the July part p. 273, Mr. Appleby gives the derivation of *Abies* as from the Latin *abeo, to rise*. Now, *abeo* has no such meaning at all, and does not really admit of such an idea; and *abies* is usually considered as a Latin root, *i. e.*, without any derivation from a known Latin word. As I should not venture to critize Mr. Appleby in his art, so neither must he find fault with me if I claim superiority in mine, as I am expected, by my profession, to know something of language, and to correct mistakes. Etymology is dangerous work; but if I was required to find a root for *abies*, which I believe is an old Etruscan word, I should surmise it would be traced back to some eastern stock, which gave birth also to the Hebrew word *abib*, which signifies "a spike of barley," and a word derived from it signifies also "vigour." These ideas are by no means foreign to the image called up in the mind in looking at the young shoots of a fir. The Jewish month *Abib* was so called because at that season the barley came into ear."

Dielytra spectabilis (*R. S. Barnes*).—The three young plants of this plant, struck this season, and now growing in the garden, will be more safe in the ground all the winter. It is as hardy as a common Pœony. If you want it to flower early, take up the plants at the beginning of February, pot them, and the slightest heat will soon cause them to flower. If a very hard winter occurs, put two or three inches of coal-ashes over the roots as they are so young.

Rhododendrons.—*J. G.* wishes to know where the following can be purchased:—*Rhododendron chrysanthemum, R. stramineum, R. hirsutum flavum, R. ferrugineum album*, and *Japan honeysuckle*.

Saxifraga hypnoides as an Edging.—"I have grown for an edging the *Saxifraga hypnoides*, and three years' trial has proved it not only the handsomest but the best in every respect. You mention it favourably in your *Gardeners' Dictionary*, but I do not think you have directed the attention sufficiently of gentlemen gardeners to the plant. I can safely say that for two years I have had it in my front garden; not three persons in passing have known what it is, and thousands must have passed by; and I am certain every third person stops to admire it. Harbouring neither insects or weeds are great advantages."—*R. S. Barnes, Brockley Road, Deptford.*

Rhubarb Leaves (*I. S.*).—There is no specific time when gardeners cease from pulling these. The more they are taken from the plants, the weaker and less productive will these be found next year. If the leaves are in great request, it would be a good plan to have two plantations, and to leave one ungathered from every second year to allow it to recover strength.

Sea Sand (*A Subscriber*).—If it is sharp siliceous sand, and the salt is washed thoroughly out of it, it will answer for potting purposes. If you have no peat, it would be possible to make a compost of that sand, mixed with old turf and old cowdung, that would do for Azaleas, &c. Of imbricated *Camellias, Sabiniana*, rose-coloured, and *Imbricata*, light red, would probably suit you. We think your *Geranium leaf* has been severely attacked by the thrips, the mouldy appearance being a secondary consequence. The *Planter's Puzzle* is at page 309 of vol. i., and answers to it at page 47 of vol. ii.

Carica papaya (*A. Suart*).—This, raised from seed sent you from Ceylon, is the common Papaw Tree of India. It requires a stove, and will grow fifteen or twenty feet high. It would require great care to induce it to bear fruit in this country, and that fruit is certainly not worth the trouble.

Wooden Shelters (*Minnie*).—These, except in severe weather, are sufficient protection to plants in cold pits; in very cold weather put some hay between the shelter and the glass.

True Cochin-China Fowls (*S. M. R.*).—You ask for a description of these, and for an answer we must refer you to *Anster Bonn's* communication at page 276 of our 6th volume. You will also find drawings of them at page 137 of our 7th volume; these portraits, however, do not do them justice, and the drooping feathers in the cock's tail are much too long.

Mummy Raspberry, &c. (*Henry*).—Our correspondent wishes to know where he can obtain seeds of this? We know of no *Strawberry* that comes into bearing when all other varieties are over except the *White Alpine*. We have gathered a good plateful of its fruit in December. A very good *pear* to precede the Jargonelle is the *Citron des Carmes*, sometimes called the Madeline, and Rose Angle Early; a very good pear to follow the Jargonelle is the *Beurre d'Amalis*.

Pine Apples (*An Essex Farmer*).—You must read *Hamilton on the Pine Apple*. You will have seen what Mr. Errington has said, and he will, from time to time, treat of their culture.

Names of Plants (*Sigma*).—Your *Verbenas* were completely dried up. Cut flowers will only have their freshness preserved by being packed in plenty of damp moss. (*Mrs. Taylor*).—Your plant is *Hydrangea nivea*, or Snowy-leaved Hydrangea. It is a native of Carolina and hardy. (*Rev. R. M. E.*).—Your plant is *Cichorium intybus*, Wild Succory, or Chiccory. Any of the *hardy annuals* may be sown now. (*James Riley*).—The parasite which has destroyed part of your clover is the Greater Dodder, *Cuscuta Europæa*.

CALENDAR FOR SEPTEMBER.

FLOWER GARDEN.

Aconite (Winter), plant, e. Anemones, plant best, e.; sow, b. Annuals (Hardy), sow, b. Auriculas not shifted in August now remove; water and shade; prepare awning to protect in autumn and winter; sow, b. Bud perpetual roses to the end of the month. Bulbous-roots, plant for early blooming, e. Carnation layers remove, b. Chrysanthemums, plant cuttings, &c., b. Cut round the roots of large specimens intended to be taken up next month, b. Cut in large specimens of geraniums, &c., in the beds to be potted, as soon as they break, to make specimens of, b. Cuttings of evergreens, put in, b. Dahlias, number and make list of, while in perfection, describing their colour, height, &c. Dress borders assiduously. Edgings, trim, plant. Evergreens, plant, b.; make layers. Fibrous-rooted perennials, propagate by slips, parting roots, &c. Grass, mow and roll; sow, b. Gravel, weed and roll. Guernsey Lilies, pot. Heartsease, plant cuttings; trim old. Hedges, clip, e.; it is the best time. Mignonette, sow in pots, to shelter in frames. Rooted Pipings, of pinks, &c., plant out for blooming. Planting Evergreens, generally, commence, e. Polyanthuses, plant. Ranunculuses, plant best, e.; sow, b. Double Rockets, divide and transplant. Roses, cut down, which must be removed at Michaelmas, ten days before taking up. Seedlings, plant out. Seeds, gather as ripe, and keep down seed-pods in flower-beds. Transplant perennials, e. Tuberous-rooted plants, transplant. Turf, lay. Verbenas, cut the roots of favourite sorts six inches from the stem; water them, and in three weeks they may be removed safely to be kept in pots; a few plants thus treated are better than many cuttings. Water Annuals and other plants in dry weather. Yuccas in, or showing for, bloom, give abundance of water to. D. Beaton.

GREENHOUSE.

Air, give freely night and day, unless when very stormy. Annuals, such as *Collinsia, Nemophila, Schizanthus*, of sorts, sow towards the end of the month, for blooming in spring and early summer. Bulbs, pot for early blooming, such as *Hyacinths, Narcissus, Tulips*, &c., also *Lachenalias, Erodiums*, &c. Camellias, still expose, but defend from heavy rains. Cuttings may still be made, and buddings proceeded with. Cinerarias, sow for late blooming; prick off seedlings for spring flowering; shift into flower-pots for winter flowering. Calceolarias, sow seed; propagate by cuttings under hand-lights, and shift small plants already struck; shrubby kinds for the flower-garden will be time enough after the middle of the month. Ericas and Azaleas, get under shelter, ready to be housed by the end of the month. Geraniums, Myrtles, Salvias, &c., propagate by cuttings, shift into larger pots, to be established before winter, and prepare for taking up out of the open border by cutting round the roots, doing only one half at a time. Where there is not plenty of room, cuttings struck early will answer better than old plants taken up, and will also save much labour. Glass, Flues, &c., clean and repair. Plants, clean, tie, arrange. Pots, free from moss and filth, and fresh surface with suitable compost. In using new pots for hard-wooded plants, let them all be soaked, and then dried, before using. Seedlings of all kinds, prick out as soon as they can be handled. Propagate all half-hardy things, such as *Geraniums, Fuchsias, Salvias*, and especially *Calceolarias, Petunias, Verbenas*, &c.; the last three-named will do better than if struck earlier, the smallest pieces will do best. They may either be planted in light sandy compost, in pots, or in a bed on a shady border; if on a north aspect, no shading will be required. Water will still be abundantly required for plants growing freely, and those intended to bloom in winter, such as *Primroses, Cinerarias*, and *Chrysanthemums*, should have manure-water given freely. Whenever you observe the first flower-bud of a *Chrysanthemum*, though no larger than a pin's head, you may give the clear manure water freely. Water should be given sparingly to plants that are to be put into a state of rest, just keeping them from flagging. All Succulents will now do better next season, the less water they receive, provided their stems are not rendered very limp and soft. Tropœolums with tuberous roots, pot whenever they begin to vegetate; they do not like shifting, therefore give a good-

sized pot at once; give very little water until the pot is getting filled with roots, as they cannot bear sour sodden soil; let the pots be well drained. Climbers will soon require cutting that have been growing rather naturally, in order that more light may be given to the plants below. If the house plants can be kept out of the house for a month longer, the creepers, to be beautiful, will require ample waterings.

R. Fish.

ORCHID HOUSE.

Air, give only on bright sunny days, from 10 o'clock till 3. Blocks, continue to syringe morning and evening, the first half of the month; the latter end in the mornings only. Baskets may be kept rather drier, excepting such as *Stanhopeas* that are growing; let these be dipped in tepid water once a-week, at least, using discretion, according to the state they are in as to being wet or dry. Dendrobiums: many species will now have perfected their pseudo-bulbs for the season; let such be immediately removed into a cooler house, and have no water given them. Other kinds will require the same treatment as soon as the full growth is attained. Growing Plants may still be retained in the warm, moist atmosphere of the orchid-house, and be kept moist at the roots. Heat in this month may be reduced a few degrees. Sudden changes are always dangerous; by gradually reducing the heat, the plants become inured to the change. Insects, search for diligently, and destroy; every one destroyed now, will prevent myriads from being bred next year. Lælia autumnalis will be growing rapidly; keep it well supplied with water, as upon the strength it acquires during this month will depend the number of flowers on the spike in October or November. Rest, give to all plants that have made their annual growth; without this they would continue to grow and never flower. Shade may be much reduced now, except on very bright days during the beginning of the month. Water, continue to give to growing plants till the year's growth is completed, then withhold it, excepting to a few species without pseudo-bulbs, which, not having that storehouse of food laid up, must have occasional dampings and sprinklings.

T. Appleby.

PLANT STOVE.

Air, give abundantly on all favourable occasions. Achimenes going out of bloom, place in a cold pit, giving water to induce them to go early to rest. Achimenes picta, continue to grow on, to flower at Christmas. Climbers on the rafters, commence to reduce greatly, by pruning off all superfluous shoots, tying the rest in neatly. In pots trained on trellises, these would be greatly benefited by being placed out-of-doors, in some sheltered nook, for a week or two at the commencement of this month; when set out, lay them on one side on a grass plot, and give the leaves on the under side a severe syringing. This would clear them of the red spider, at all events. Frames containing stove plants must now be covered up every night with double mats; uncover early, and lift up the light for a minute or two to let out foul air, and let in fresh and sweet; give these plants water only in the morning. Gesnera zebrina: those started early will now be in flower; keep the rest growing by keeping up a heat of 72° or 75°, and supply water in a tepid state in due proportion. Other kinds of Gesneras and Gloxinias gone out of bloom place in cool frames, and withhold water, to cause them to grow gradually to rest; plants of this kind struck in the spring will now be in flower; keep them in the stove, and give water. Plants, generally, that *have bloomed*, give less water and heat to. Winter-blooming Plants, give every encouragement to, to cause a fine bloom. Soils, procure and prepare for use by frequently turning them over; keep them clear of weeds at all times.

T. Appleby.

FLORISTS' FLOWERS.

Anemones, plant in rich light soil. Auriculas and Polyanthuses, remove towards the end of the month into winter shelter; take the opportunity to cleanse and top-dress slightly. Carnations and Picotees, take off layers, and pot them in pairs in four-and-a-half inch pots; such layers as have not rooted, pot, and place in a frame, kept close, till they root. Chrysanthemums, give liquid-manure to; place in the greenhouse a few that show bloom, to flower early; protect from early frosts, should any occur. Cinerarias, pot, and advance a stage. Dahlias, continue to protect the blooms from sun, rain, and insects; keep them well tied in, to prevent the autumnal winds from breaking off the side shoots. Fuchsias, in pots, gone out of bloom, remove out of the greenhouse, and place in a situation where severe frost will not reach them; under a stage in the greenhouse, or in a cold pit, will do. Iris (bulbous), plant latter end of the month, in rich borders or beds. Layers, of Carnations, Pansies, and Pinks, take off as soon as rooted, and pot. Pinks, prepare the bed or beds to plant out layers in; mix freely the soil with well decomposed littery dung and leaf-mould; plant the pipings or young plants out towards the end of the month. Ranunculuses, if not all taken up must be done instantly, or the autumn rains will start them into growth prematurely; examine roots of, taken up previously, and if mouldy lay them in the sun to dry more effectually. Roses cut off all decayed blooms as they occur. Tulip-bed, prepare, by adding dung to the soil, if not exhausted, or by making an entire new bed; see that it is well drained, and place two inches of cow-dung over the drainage.

T. Appleby.

FRUIT GARDEN.

Apples, gather and store as they ripen; still war against the American blight. Budding, slacken the bandages about the middle of the month, and pinch late shoots on the stocks. Currants, preserve by covering. Cherries (Morellas), beware of wasps. Cranberries, collect. Damsons, look to, as they ripen. Figs, stop every shoot, and thin superfluous ones. Gooseberries, destroy the latest caterpillars, and protect carefully retarded fruit. Insects, of all kinds, destroy incessantly. Mulberries, gather. Nuts, attend to the ripening of. Plums, protect from wasps. Pears, stop all growing wood; gather carefully as they ripen. Stopping, in general, carry out completely before the end. Strawberries, destroy all late runners, and cultivate liberally those planted in July and August. Tomatoes, pinch every shoot, and cut away half the roots, at least, if gross; also prune away every late shoot. Vines, stop every growing shoot, and begin to strip away early pinched laterals where they shade the earliest formed leaves.

R. Errington.

FRUIT FORCING.

Air, give freely to all forcing-houses. Air-moisture be more sparing of. Bottom-heat must decline gradually with the decrease of light. Cucumbers, exercise the same care over as in April. Cherries: the end is a good time to shift forcing cherries. Cleaning: cleanse all forcing structures as they become at liberty. Early Forcing: study to get things thus destined gradually into a state of rest. Figs, see that the later crops do not suffer through drought. Flues: clean all flues in houses at rest during the month. Grapes, use the scissors weekly to those ripe; give abundance of air, and use fire-heat in damp periods. Linings, renew. Melons, continue a lively heat with free ventilation; keep the fruit from contact with soil, and frequently dress them. Nectarines, as *Peaches*. Pines: *fruiters*, keep up lively heat, stir, and water the tan, and use liquid-manure where dry: *Successions*, give plenty of air to harden. Shift any requiring it, for the last time this season. Peaches, stop growing shoots; syringe frequently; use dung-water if still green, and be sure to exterminate every red spider. Painting, get done in rest-houses. Repairs, get done in all structures at liberty. Sulphur apply, and unremittingly, in all houses, especially Vineries. Sea-kale, crush the leaves of a few strong crowns for very early forcing in the end. Strawberries, in pots, keep down runners; give dung water liberally, and plunge in a sunny spot. Ventilation, be liberal in. Wasps, take nests.

R. Errington.

KITCHEN-GARDEN.

Angelica, thin out, and earth-stir in the seed-bed where the plants may remain until the spring. Aromatic Pot Herbs, finish gathering. Artichokes, break down stems, and keep clear of weeds. Asparagus-beds, weed. Balm, cut, and dry. Beans, keep clear of weeds, and seed collect, and dry off well; store them away in the pods. Beet, take up as wanted. Borage, earth-stir amongst, and collect seed. Borecole, plant out, and use the hoe freely amongst. Brocoli, plant, and keep the earth stirred in fine dry days. Burnet, plant. Cabbages, plant out; keep the seed-beds free from weeds, and earth-stir. *Red Dutch Cabbages* are ready for pickling. Cardoons, earth up well in dry weather. Carrots, attend to thinning and earth-stirring the August sown crops. Cauliflower Plants, prick out in rich, open, warm borders, so as to have a good choice of plants to stand the winter. Celery, earth-up freely in dry weather; let the earth be well forked-up and broken to pieces previously to spading it up to the rows, and plant out successional crops, which will be found very useful to the cook during the winter and spring months. Chervil, sow. Coleworts, plant out. Coriander, sow. Corn Salad, sow. Cress (American), sow and plant. Cucumbers, attend to in pits and frames, top and clear away all decayed leaves, &c.; strike cuttings of favourite kinds, or sow seeds, for winter and spring growth. Endive, plant out plentifully; tie up, or otherwise cover up to blanch. Fennel, plant and cut down. Hoeing, attend to in all cases in dry weather, and be the more attentive to this between heavy showers. Hyssop, plant. Jerusalem Artichokes, keep clear of weeds; do not injure the stems; take up roots if required for use. Kidney-beans, earth-stir among, and collect seeds; put away dry in pods. Leeks, plant and earth-stir. Lettuces may still be sown in warm borders, but attend to those which were sown at proper time; prick out from the seed-beds; keep them clear from weeds, so as to have a good winter supply of sturdy plants; tie up full grown. Melons, be sparing with water at this season; give plenty of air to ripening fruit; keep up warmth by backing up with linings, &c.; shut up early. Mint, still cut and dry. Mushroom Spawn, collect; this is often found when breaking up old hotbeds; put it away in close dry sheds until wanted. Mushroom-beds, make; this is the best season in the whole year for making mushroom-beds in any way, from the proper mushroom-house to the common span-roof bed in the open air to be covered with straw. Nasturtiums, gather as they become fit for use. Onions, press down to promote their bulbing, and take up those that are ripe; dry well before storing away for winter; attend to the August-sown; weed and earth-stir. Potatoes, take up and store away, and should be looked over shortly and often, after being taken in until all the diseased ones are removed. Parsley, cut down and transplant in some warm corner for winter supply. Peas, look after birds and collect seed of, dry them well, and store them away in their pods. Pennyroyal, cut and dry. Marjorum, the same. Radishes, sow in warm borders. Rhubarb, clear from weeds. Sage and Savory may be planted. Savoys, plant and earth-stir. Sea-kale-beds, keep clear from weeds. Seeds, gather of all kinds as they ripen. Small Salading, sow. Sorrel, plant. Spinach, sow in warm border; attend to thinning-out the August-sown crops from six to eight inches apart in the rows. Tansy and Taragon, attend to if required. Thyme, plant. Turnips, sow of the best little early kinds; thin and hoe advancing crops. Watercress, plant. Watering, in dry weather, must be particularly attended to previous to planting, or pricking out any kind of young plants, or sowing the same. Water well both before and after. Attend to earthing-up, earth-stirring, and hoeing in general, in dry weather; the rake may be advantageously used in many cases after the hoe at this catching season of the year. Many good managers only plant Cabbages in one week of the whole year, and that in the first week in September, and from plants sown about the 21st of July; the soil to receive them should be made thoroughly rich. Others make a good planting at this time, and another in March, which will give an excellent supply for the whole year.

T. Weaver.

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WEEKLY CALENDAR.

M D	W D	SEPTEMBER 2—8, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
2	TH	Berberries ripe.	30.093 — 30.067	73—59	N.W.	—	16 a. 5	43 a. 6	8 33	18	0 35	246
3	F	Meadow Saffron flowers.	30.127 — 30.072	72—51	N.E.	—	18	41	8 50	19	0 54	247
4	S	Grapes ripen.	30.049 — 30.029	69—46	N.	01	19	38	9 9	20	1 14	248
5	SUN	13 SUNDAY AFTER TRINITY.	30.209 — 30.151	67—49	N.	—	21	36	9 33	21	1 33	249
6	M	Flycatcher last seen.	30.373 — 30.296	63—44	N.E.	—	23	34	10 4	☾	1 53	250
7	TU		30.448 — 30.430	66—48	E.	—	24	32	10 41	23	2 13	251
8	W		30.498 — 30.465	62—42	N.E.	—	26	29	11 29	24	2 34	252

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 69.6° and 48.1° respectively. The greatest heat, 82°, occurred on the 2nd in 1843; and the lowest cold, 30°, on the 4th in 1850. During the period 98 days were fine, and on 77 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

(*Continued from page* 313.)

ACONITUM. WOLFSBANE.

GENERIC CHARACTER.—*Calyx* none. *Petals* five, below seed-vessel, unequal, four of them in pairs, opposite; the upper one hooded, or tubular, inverted, the convex or hind part being uppermost, the bent down point curved back; two lateral ones roundish, opposite, approaching each other; two lowermost oblong, bent down. *Nectaries* two, within the hollow of the uppermost petal, on long awl-shaped stalks, tubular, drooping, oblique at the orifice, curved back at the honey-bag behind. *Stamens* numerous, broad at the base, awl-shaped, short, directed towards the upper petal, some of the innermost filaments often swollen and abortive. *Anthers* roundish, small, erect. *Germens* three, four, or five, oblong. *Styles* terminal, awl-shaped, spreading. *Stigmas* simple, pointed. *Seed-vessels* (*follicles*), as many as the germens, straight, long egg-shaped, of one valve, bursting at the inner side. *Seeds* numerous, angular, rugged, at the edges of the capsule.

ACONITUM NAPELLUS.

DELPHINIUM CONSOLIDA.

(DELPHINIUM CONSOLIDA. This should have been inserted at page 313, instead of the one there given by mistake.)

ACONITUM NAPELLUS: Common Wolf's-bane; Monk's-hood; Friars Caps.

Description.—It is a perennial. *Root* tuberous, tapering, simple, woody. *Stem* erect, firm, unbranched, hairy, leafy, eighteen inches high, ending in a large, upright spike of flowers. *Leaves* alternate, blackish-green, but paler beneath, shining, stiff, short-stalked, three-lobed down to the leaf-stalk; side lobes deeply two-cleft; middle lobe three cleft; each division of each lobe pointedly and unequally three-cleft. *Flowers* dark blue, each on a separate, short stalk; upper-petal arched at the back, lateral petals hairy within. *Germens* three, smooth. *Bracte* undivided.

There are two or three varieties with white, rose-coloured, and variegated flowers.

Places where found.—In watery places; rare.

Time of flowering.—June and July.

History.—The name of *Aconite* is said by Theophrastus to be derived from Akonis, a city of Bithynia, near which the earliest noted species grew; and *napellus* has reference, perhaps, to its root, for *napellus* means a root like that of the rape. By the ancients it was considered the most powerful of poisons, and they expressed their detestation of it by fabling that it was the invention of Hecate, and formed from the foam of Cerberus, the watch-dog of hell. It is certainly a most virulent poison, and is not a plant that should be grown where children and ignorant people frequent. Smelling strongly at the fully expanded *flowers*, has caused swooning and loss of sight for two or three days; the *leaves* eaten instead of celery in a salad, have caused madness and death; the *young shoots* have proved equally fatal, being mistaken for the shoots of Masterwort; but the *root* is the most poisonous of all the parts of the plant, one drachm of it given to a condemned criminal in Germany caused his speedy death; and five persons at Antwerp, who eat of it mistakenly, all died. Like all violent poisons, when administered judiciously it is found to be remedial for many diseases of the human frame. Baron Stoerck led the way by administering it in violent pains of the sides and joints, in glandulous tumours, and other troublesome disorders. He gave from ten to thirty grain doses of its extract. In Sweden, doses of from one grain to a scruple of an extract of the juices of the leaves have been given twice or oftener per day, in cases of rheumatism and intermittent fevers. The chief benefits derived from it have been in cases of rheumatic and other chronic disorders. The varieties with blue flowers appear to be more powerful than those of which the flowers are yellow or white. When dried, the acrimony of the leaves is said to be almost entirely destroyed; at all events, horses then eat it without injury. It is fatal even to goats when they eat it green. Dr. Duncan gives very excellent directions for the preparation of medicines from this plant in his *New Edinburgh Dispensatory*. The virulence of the plant seems to reside in a vegetable alkali to which the name of *Aconitina* has been given. (*Smith. Martyn. Duncan.*)

As long since as February (*vol.* vii. 314), after giving a history of the Gooseberry, and a list of the most successful prize-winning varieties, we promised to add some further comments. Time has passed insensibly along, various subjects have pressed upon us for attention, and we are now only reminded of the subject by receiving a box of Lancashire prize gooseberries; and seeing in them a full justification of the late Dr. Neill's remark,

"When foreigners witness our Lancashire gooseberries, they are ready to consider them as forming quite a different kind of fruit."

Of the prize gooseberries now before us, there is the *red*, Conquering Hero, weighing 28 dwts. 7 grs.; of *whites*, Eagle, 24 dwts. 1 gr.; of *greens*, Lady Morley, 22 dwts. 10 grs.; General, 24 dwts. 3 grs.; Thumper, 23 dwts. 4 grs.; and of *yellows*, Drill, 23 dwts. 9 grs.; Catherina, 26 dwts. 9 grs.; and Two-to-one, 25 dwts. 6 grs. All the berries are symmetrical and well-grown, excepting Conquering Hero. This, from its appearance, we should think had been unfairly treated to make it weigh heavier; and we conclude that the judge must have thought so too, for he did not award it a prize.

It would not be easy to point out greater evidences of the superior mental tastes and pursuits of the mechanic mind of England, when compared with its agricultural mind, than are the one hundred and sixty-eight gooseberry shows, supported by artisans alone, at which such fruit is exhibited. True, it *is* only a gooseberry that is the object of excellence, but the same artisan-mind sustains *Celery* shows, and also other shows for encouraging the growth of the *Auricula* and *Polyanthus*. These, too, are *only* vegetables and flowers, but the mind that has a taste for these has a fund of happiness, a bias in that upward direction, more rarely enjoyed and more rarely aimed at by the mere rustic. It has been argued that the employments of the tiller of the soil are slow, and cloddy, and that as they are pursued usually solitary, there is little opportunity for that collision of thought, that general activity which occurs to the artisan, whose occupations bring many actively together. Others urge that what is a man's constant labour, rarely forms also the amusement of his leisure, and, therefore, he who ploughs all day cannot be expected to dig for amusement in the evening. There is considerable force in these defences, or excuses, for the country labourer not usually being a distinguished gardener; but we know there are too many exceptions not to warrant the conclusion that, even when wages are not sufficient to do more than barely keep rags and starvation from benumbing the spirit of the household, the farming labourer, if duly encouraged, will strive vigorously and emulously for the rewards held out for superior cottage gardening.

Those not conversant with the labouring classes form no just estimate of the intellectual tastes and powers that are there working, and gladdening, and improving the mass of our population. We have mingled with the miners of the north, and can bear testimony to the high mathematical acquirements that may be there found deep beneath the surface of the earth; and we have found among the weavers of the west an amount of correct botanical knowledge that astonished as much as it delighted us. How this taste prevails, and is fostered, may be, in some degree, appreciated from the printed *List of Botanical Meetings for* 1852, to be held in Lancashire by the working men of the factories. The meetings, forty-two in number, commenced on the 11th of January, and the following are those yet to be held, which we print with the concluding notes entire, that our readers generally may appreciate the merits and certain benefits derivable from such meetings:—

Sept. 5, Mrs. Snape, Bay Horse, Chapelfield, near Whitefield.
" 12, Mrs. Alice Coupe, Golden Lion Inn, Blackley.
" 19, Mrs. Worsley, Ring o' Bells, Middleton.
" 26, Mr. John Baker, Mount Sion Lane, Radcliffe.
Oct. 3, Mr. John Blackley, Kirkham's, Prestwich.
" 10, Mr. John Shaw, Hare and Hounds, Outwood, near Stand, in Pilkington.
" 24, Mr. Benjamin Wolstencroft, New White Lion, Blackley.
" 31, Mr. James Meanock, White Bear, Blackwater-st., Rochdale.
Nov. 21, Mr. Joseph Fletcher, Horse Shoe, Rochdale Road, Blackley.
Dec. 5, Mr. Jacob Kent, Dusty Miller, Middleton.
" 26, Mr. George Wood, Besses-o'th'-Barn, near Whitefield.

As specific discrimination and accuracy in Botanical Nomenclature are the chief objects sought to be obtained by the aid of these meetings, all persons who attend are hereby respectfully solicited to bring with them specimens of such plants, either indigenous or exotic, but particularly the former, as they can conveniently procure.

N.B. At the last meeting in December, will be agreed upon where the meetings are to be held the next year.

JOHN HORSEFIELD, President.
JAMES PERCIVAL, Vice-President.
JOHN HAWORTH, Steward.
THOMAS WHITTAKER, Secretary.

☞ The first meeting is where lists are to be served out for the whole year; also, they may be had of the President, or the Secretary, at one penny each.

Being somewhat puzzled by the terms employed by the northern gooseberry growers, and published by them in their annual *Gooseberry Growers' Register*, we sent some queries to Mr. J. Turner, of Parkwood Springs, Neepsend, Sheffield, and this is his explanatory reply*:—

What is making-up? The lists, or books, as the case may be, are left open for any grower to enter himself as a member until March or April, and sometimes May, and any person neglecting to enter himself on or before that time, cannot do so that year; the books are said to be made up at that time, and, in consequence, this is called "making-up," or "making-up meeting." At the making-up, each member is required to pay all or part of his subscription, or not allowed to show for a steward's prize.

Can a man take money instead of kettles or tea-pots? No. They are bought expressly for the show, and consequently he must take them; but being bought generally by quantities, they are bought cheaper, and a person has seldom any difficulty in disposing of them for the same price as they are charged to the show, and very often he can get more. They are generally sold as soon as they are won, but I have known persons who would not sell one even though they were offered double the money they cost. I have seen one house with every available hook, or nail, on the top of the ceiling, hung with kettles, all kept very nice and bright.

What are the value of kettles and tea-pots? Kettles, according to size and weight, from 7s. to 12s.; tea-pots, from 6s. to 10s. and 12s.

What is meant by prizes, 40s., in each colour? Forty shillings to each class; viz., red, yellow, green, and white. After the payment by the society for the pans, kettles, and tea-pots, are deducted, there would be 40s. for the reds in classes, the same sum for yellows, greens, and whites; which 40s. are generally divided as 6s. for the first in the class, 5s. 9d. second, 5s. 6d. third, 5s. the fourth, &c.

You will see *Cup*, or P. P. (Premier Prize), this is generally money from 10s. to 20s; *Little Cup*, from 9s. to 12s.; *Brass Pans* range in value from 7s. to 14s.; brass pans, cup, premier prize, kettles, tea-pots, &c., are called *Stewards' Prizes*. A *steward* is a person who, having duly paid his sub-

* Those who wish for plants of these gigantic gooseberries had better apply to him.

scription at the appointed time, is entitled to show for any one steward's prize at a show; but seldom any person is allowed to win more than one steward's prize at one show, unless he be a *Maiden Grower*, that is, one who has never won a prize; in that case they may take a maiden prize (M. P.); and this privilege is given to maiden growers, to take a steward's prize with the same fruit, if it is large enough. You will also see B. B. B., that is the *Best Beaten Berry*. *Colts' Kettles* and *Maiden Growers' Kettles* are one and the same thing.

You will perceive the word *premium* to some of the kinds; those are new kinds that have been let out two years, and the persons who let them out give 10s. 6d. as a premium for the best three weighed in, viz. 5s., 3s., 2s. 6d.

FORSYTH MSS.

(*Continued from page* 329.)

The fleet arrived at Bombay at the end of December, and Mr. Paterson wrote immediately to Mr. Forsyth, informing him of the character of the war with Hyder Ally, in which he was now about to take a part, and expressing a fear that his military duties would leave him "no great opportunity of making any collection" of specimens in natural history. His movements, after leaving Bombay, in March, are thus detailed in a letter to Mr. Forsyth, dated June 10th, 1782, from Trincomalee.

I have been very busy these several days in writing a short account of my different excursions to Mr. John Hunter, since I left England, and mentioned my compliments in his letter to you, not thinking I should have time to write to you before the vessel sailed. But, after consideration, I should never forgive myself in neglecting you, who I shall be everlastingly indebted to for the many obligations I labour under. You will think it something strange that I did not send you the few seeds I have collected at this place; but it is not for want of inclination. My worthy friend, Colonel Fullarton, seemed to be desirous of sending some things for Mr. Banks (afterwards Sir Joseph), and at the same time wished me to send them in my own name. I know you will say that I have forgotten my friends, but I hope that time will convince you of my good sentiments. I have a very good collection of seeds and specimens at Madras, which you may depend upon having, if it please God I ever get to that place. I dare say that, if you mention this to Mr. Hunter, you will get some of the seeds, which, I believe, are curious, and likewise see the short account of Johanna and Elephanta, with the ground plan of the caverns of that island; and, to make up for the whole, I shall give you a short account of our engagement with the French. I wrote you in my last letter from Madras, that we were then in orders to embark on board the men-of-war, which we did on the 28th of March, and on the 29th we sailed to the southward, nine sail of the line. On the 31st we fell in with the Sultan and Magnanime from England, with a convoy of six sail of Indiamen. The Indiamen proceeded to Madras, and our fleet, which now consisted of eleven sail of the line, to the southward. On the 5th of April we drove a French store ship on shore at Tranquebar, a Danish settlement on this coast, where we had intelligence of the enemy's fleet passing five days before. The admiral (Hughes) therefore proceeded on for Trincomalé, to land the troops he had on board for that garrison.

On the 9th of April we saw the enemy to leeward of us, but took no notice of them, and by their different manœuvres they got to windward of us, and between us and our intended port. At noon they were very near us, bearing down, and at the same time forming their line, upon which the admiral made the signal for our fleet to form a line of battle ahead. At twenty minutes past one the van began to engage, and at two, both fleets were engaged, which continued very hot on both sides till sunset, and several shots were fired, till it became quite dark, when they both anchored so close to one another, that it was hard to distinguish the English from the French fleet. As we had a little rain in the afternoon the ship was very wet and uncomfortable; but, nevertheless, we remained at our quarters on the wet deck for the night. In the morning we perfectly saw that we were within random shot of the enemy, but they soon got their ships about three miles from us, when they formed their line, and at the same time we were employed forming the line also.

I shall just mention a few particulars that happened during the action. The Monmouth, a sixty-four, which was ahead of the admiral, loofed up on purpose to support that ship, got out of the line, and so near the enemy, that she had three ships playing upon her for some time. She had her main and mizen masts shot away, ten guns dismounted, forty-six men killed on the spot. This was the only ship that suffered by the enemy, but several of the others suffered by accidents that happened by explosions. In the Superb, which was the admiral's ship, an explosion happened on the main deck, which killed and wounded about fifty men. In the Burford, the ship I was in, we had six men killed by the enemy; an explosion also happened here, which killed three, and wounded seventeen. I cannot give you an account of the general loss of the fleet, but I believe the French lost more men than we did. The French admiral's ship was so much hurt that he was obliged to leave her during the action. We were so near the shore, that some of the enemy's, as well as our own ships, struck on the ground. Both the fleets remained at this place for nine days repairing their damages, during which time it was shocking to behold the number of dead bodies floating on the water—some without their heads, and others without arms, and their skin entirely burnt from their flesh. I shall say no more on this disagreeable subject, only mention that the French sailed the 21st, and our fleet the 22nd, and arrived at this place the 24th, when we landed our sick and wounded, and all this time have been repairing our ships, and getting masts in the Monmouth. We expect to sail in a few days, and it is believed towards Madras, as we hear that the French are gone that way; and it is most probable that we will have another brush with them before we get to Madras.

This place, being lately taken from the Dutch, is entirely deserted by the natives, as well as the inhabitants, so that we are under the necessity of sending out parties of men for eighteen or twenty miles to bring in cattle for the fleet. I have the pleasure of acquainting you that I am in fair way of being a lieutenant in a short time, if it please God I keep my health, which is very much against a European constitution in this country. But I have been exposed every day to the sun, and now am in as good state of health as ever I was in. We have lost many good fellows since we left Madras.

GOSSIP.

This department shall be occupied to-day with a few more extracts from that most agreeable and instructive volume, Mr. Fortune's *Visit to the Tea Districts of China and India*.

Funereal Cypress (*Cypressus funebris*).—The most beautiful tree found in this district is a species of weeping cypress, which I had never met with in any other part of China, and which was quite new to me. It was during one of my daily rambles that I saw the first specimen. About half-a-mile distant from where I was, I observed a noble-looking fir-tree, about sixty feet in height, having a stem as straight as the Norfolk Island pine, and weeping branches like the willow of St. Helena. Its branches grew at first at right angles to the main stem, then described a graceful curve upwards, and bent again at their points. From these main branches others long and slender hung down perpendicularly, and gave the whole tree a weeping and graceful form. It reminded me of some of those large and gorgeous chandeliers, sometimes seen in theatres and public halls in Europe. What could it be? It evidently belonged to the pine tribe, and was more handsome and ornamental than them all. I walked, no,—to tell the plain truth, I ran up to the

place where it grew, much to the surprise of my attendants, who evidently thought I had gone crazy. When I reached the spot where it grew it appeared more beautiful even than it had done in the distance. Its stem was perfectly straight, like *Cryptomeria*, and its leaves were formed like those of the well-known arbor-vitæ, only much more slender and graceful. This specimen was fortunately covered with a quantity of ripe fruit, a portion of which I was most anxious to secure. The tree was growing in some grounds belonging to a country inn, and was the property of the innkeeper. A wall intervened between us and it, which I confess I felt very much inclined to get over; but remembering that I was acting Chinaman, and that such a proceeding would have been very indecorous, to say the least of it, I immediately gave up the idea. We now walked into the inn, and, seating ourselves quietly down at one of the tables, ordered some dinner to be brought to us. When we had taken our meal we lighted our Chinese pipes, and sauntered out, accompanied by our polite host, into the garden where the real attraction lay. "What a fine tree this of yours is! we have never seen it in the countries near the sea where we come from; pray give us some of its seeds." "It is a fine tree," said the man, who was evidently much pleased with our admiration of it, and readily complied with our request. These seeds were carefully treasured; and as they got home safely, and are now growing in England, we may expect in a few years to see a new and striking feature produced upon our landscape by this lovely tree. Afterwards, as we journeyed westward, it became more common, and was frequently to be seen in clumps on the sides of the hills. This tree has been named the FUNEREAL CYPRESS.

THE BAMBOO.—The bamboo is one of the most valuable trees in China, and is used for almost every conceivable purpose. It is employed in making soldiers' hats and shields, umbrellas, soles of shoes, scaffolding poles, measures, baskets, ropes, paper, pencil-holders, brooms, sedan-chairs, pipes, flower-stakes, and trellis-work in gardens; pillows are made of the shavings; a kind of rush cloak for wet weather is made from the leaves, and is called a *So-e*, or "garment of leaves." On the water it is used in making sails and covers for boats, for fishing-rods, and fish-baskets, fishing-stakes, and buoys; catamarans are rude boats, or rather floats, formed of a few logs of bamboo lashed firmly together. In agriculture the bamboo is used in making aqueducts for conveying water to the land; it forms part of the celebrated water-wheel, as well as of the plough, the harrow, and other implements of husbandry. Excellent water-pipes are made of it for conveying springs from the hills, to supply houses and temples in the valleys with pure water. Its roots are often cut into the most grotesque figures, and its stems finely carved into ornaments for the curious, or into incense-burners for the temples. The Ning-po furniture, the most beautiful in China, is often inlaid with figures of people, houses, temples, and pagodas in bamboo, which form most correct and striking pictures of China and the Chinese. The young shoots are boiled and eaten, and sweetmeats are also made of them. A substance found in the joints, called tabasheer, is used in medicine. In the manufacture of tea it helps to form the rolling-tables, drying-baskets, and sieves; and last, though not least, the celebrated chop-sticks — the most important articles in domestic use—are made of it. However incredulous the reader may be, I must still carry him a step further, and tell him that I have not enumerated one-half of the uses to which the bamboo is applied in China. Indeed it would be nearly as difficult to say what it is *not* used for as what it is. It is in universal demand, in the houses and in the fields, on water and on land, in peace and in war. Through life the Chinaman is almost dependent upon it for his support, nor does it leave him until it carries him to his last resting-place on the hill-side, and even then, in company with the cypress, juniper, and pine, it waves over and marks his tomb.

DISCOVERY OF WISTARIA CHINENSIS.—The Glycine, or *Wistaria Chinensis*, has been long known in Europe, and there are large trees of it on many of our houses and garden-walls. It was introduced into this country from a garden near Canton, belonging to a Chinese merchant named Consequa; but it is not indigenous to the south of China, and is rarely seen in perfection there. Indeed the simple fact of its being perfectly hardy in England, shows at once that it has a more northern origin. Before the last war with China, foreigners were confined to narrow limits about Canton and Macao, where they had no means of knowing anything of the more hardy plants of the north, which they sometimes met with in gardens, and introduced into Europe. Now, however, we can prosecute our botanical researches in a country which is nearly a thousand miles further to the north-east, and at many other places which lie along that line of coast. The island of Koo-lung-sû, for example, near Amoy, was taken by our troops during the war, and occupied by them for some years, according to treaty, until a portion of the ransom-money was paid. It seemed to have been a place of residence for many of the mandarins and principal merchants in peaceful times, and boasted of its gardens and pretty fish-ponds. When I first saw these gardens they were mostly in a ruinous condition, and everywhere exhibited the fatal effects of war. Many beautiful plants, however, still continued to grow and scramble about over the ruined walls. Captain Hall, of the Madras army, who was stationed there for some time, was very fond of botany, and took great pleasure in pointing out to me all the plants which he met with in his rambles. "I have good news for you," said he one morning when I met him; "come with me and I will show you the most beautiful plant on the island. I have just discovered it. It is a creeper, produces fine long racemes of lilac flowers before it puts forth its leaves, and is deliciously fragrant." What could it be? was it new? would it produce perfect seeds? or could young plants be procured to send home? were questions which rapidly suggested themselves. It is only the enthusiastical botanical collector who can form an idea of the amount of excitement and pleasure there is when one fancies he is on the eve of finding a new and beautiful flower. Captain Hall led the way, and we soon reached the spot where the plant grew. There had been no exaggeration in his description; there it was, covering an old wall, and scrambling up the branches of the adjoining trees; it bore long racemes of pea-shaped flowers, and scented the surrounding air with its odours. Need I say it was the beautiful *Wistaria?* But it was not found in a wild state even at Amoy, and had evidently been brought from more norther latitudes.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

ABERDEENSHIRE, Sept. 17. (*Sec.* G. Reid.)
ALLENDALE, Sept. 11th. (*Secs.*, G. Dickinson and G. J. French.)
BATH, Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)
BRIDGEWATER, Sept. 22. (*Secs.*, Mr. J. Leaker and Mr. J. Hayward.)
BRIGG, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
BURY ST. EDMUNDS, Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
CALEDONIAN (Inverleith Row), Edinburgh, Sept. 2, Dec. 2.
CHEPSTOW, Sept. 14. (*Sec.* J. F. Hartland.)
CLAPHAM, Sept. 11.
COLCHESTER and EAST ESSEX, Sept. 8, at the Rev. T. Round's grounds, Holly Trees, All Saints.
COVENTRY and WARWICKSHIRE, Aug. 31st. (*Sec.* Dr. Phillips.)
DUMFRIES and GALLOWAY, Sept. 9th. (*Sec.* Mr. W. G. Johnstone.)
DURHAM, Sept. 8.
FORFARSHIRE (EASTERN), Sept. 15 (Arbroath).
GLASGOW, Sept. 10.
HAMPSHIRE, Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
HEXHAM, Sept. 15, 16.
HULL, Sept. 16.
KIRKCALDY (Fifeshire), Sept. 9.
LINCOLN, Sept. 14.
LIVERPOOL, Sept. 2 (Botanic Garden).

LONDON FLORICULTURAL (Exeter Hall, Strand), Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
MAIDSTONE. In-door Show. Sept. 8. (*Sec.* Mr. J. G. Smith, Week-street.)
MID CALDER (Parish school-room), Sept. 10.
NEWBURY, Sept. 3.
NORTH LONDON, Nov. 23, Chrysanthemum.
NORTHAMPTON, Sept. 27, Dahlia.
OXFORDSHIRE (ROYAL), Sept. 23. (*Secs.*, C. Tawney and W. Undershell, Esqrs.)
PEEBLESHIRE, Sept. 14th. (*Sec.*, J. Stirling.)
PONTELAND (Newcastle-upon-Tyne), Sept. 8. (*Sec.* Rev. J. M. St. Clere Raymond.)
SOUTH DEVON BOTANICAL AND HORTICULTURAL, Sept. 7. (*Sec.* J. Cree Hancock, Esq., Stonehouse.)
SOUTH LONDON (ROYAL), Sept. 2†, 8, Oct. 14†, Nov. 11†, Dec. 9†, 16.
SURREY AMATEUR (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
TURRIFF, Sept. 17.
WHITEHAVEN, Sept. 17, Dahlias.

POULTRY SHOWS.

BIRMINGHAM AND MIDLAND COUNTIES, 14th, 15th, 16th, and 17th December.
BRISTOL AGRICULTURAL, December 7th, 8th, and 9th. (*Sec.* James Marmont.)
BURY AND RADCLIFFE (Lancashire), Sept. 3 (Radcliffe).
CORNWALL (PENZANCE), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)
MANCHESTER AND LIVERPOOL, Sept. 23. (*Sec.* Mr. H. White, Warrington.)
ROYAL NORTH LANCASHIRE, Aug. 26th, at Preston.

AUTUMN FRUIT PLANTING.—COMPOSTS.

SEPTEMBER is, perhaps, above all periods, the very best time to lay in, or prepare, *composts;* and as most of our fruits require a little assistance in this way, we beg to offer advice suitable to the period. Root-pruning, too, which it is said may be done at all seasons, is, in our opinion, best performed in the last week, or, at latest, the beginning of October. What *may* be done, and what *ought* to be done, are frequently very different affairs. The earnest fruit cultivator will naturally desire to select the best time; and, like most other operations, there is a time, be it when it may, that is more proper than any other. As to composts—several reasons exist why they ought to be procured at this period. In the first place, it is desirable to procure *surface soils*, with as much of coarse vegetable materials as possible—vegetable matter in a somewhat solid and ripened condition—in order that its texture may endure. Soils, or loams of a sound and proper character, are what the gardener terms mellower in the dry weather of autumn than at other times; the heat of summer has formed many a fissure, causing the soils to undergo severe atmospheric action, thereby breaking down, or softening the harsher portions, and infusing through the whole those gaseous matters which are of the highest benefit to vegetable life. The gardener, too, has more leisure in September than at any other period in the whole year; there is little but fruit gathering, ordinary cultural matters and general order, to command his services. This, therefore, is no mean consideration: and, where team work is requisite, why the harvest is over, and our "stable characters" are as much at leisure as the gardener.

Thus much for arguments; and there is yet another: fresh composts should never be handled when wet and adhesive, and there are few Septembers but offer a capital chance of avoiding these evils. It will be seen, that in taking a rather broad view of this matter, our remarks are intended to apply to operations on a small scale; they refer, in the main, to those who are about making new gardens, or who contemplate re-arranging old ones. As for those who simply want to plant or remove a tree or two, they will of course need much less ceremony.

We would here advise all those who are about *planting trees* on fresh and unoccupied sites, to prepare for the work as soon as possible, as thereby, not only will a vast amount of labour be saved, but the work will be performed in a much more efficient manner. It is truly pitiable to observe people, not over busy in September, postponing such matters until the short days of winter, or to the busy days of February or March; when, not only the chances against success are much increased, but other useful and necessary labours are thrust aside, or protracted, to the detriment, and of course loss, of other gardening interests. One day in an ordinary September, taking length and the conditions of the soil fairly into consideration, is fairly worth three ordinary winter or February days. Besides all this, we are fully persuaded that October planting has an advantage over all other portions of the year, taking the average of seasons; and this with respect to both deciduous trees and evergreens. We are aware that the opinions of some first-rate men are against us, and that there are a few exceptions to this general application; but the majority are with us, and common sense to boot. Besides, if the balance be so even betwixt the two practices, who would not at once prefer the autumn, for the collective reasons before given? There appears no reason to object to the removal of fruit trees before the leaf is entirely cast, providing active growth has fairly ceased, and the leaves are turning yellow. It is a similar proceeding to taking up potatoes before the haulm is dead ripe. Now, although we are strong advocates for thorough ripening of the wood of fruit trees intended to produce a crop of fruit, yet there is no cause for apprehension in the case of newly planted trees, the ends in view being dissimilar. In the one case, blossom buds are concerned, which cannot be too highly elaborated; in the other, the production of shoots from wood buds is simply the object.

Now, it is well known, that excessive perspiration by means of the foliage is the great hindrance to successful planting. Discussing then, for a moment, the comparative merits of spring and autumn planting, who can doubt that there is a much greater demand on the perspiratory action in March than in October. Besides, such action in the spring is in the *ascending* scale; just the reverse in the autumn. And not the foliage alone suffers, but, as long experience tells us, the very wood also; or why so many suggestions about wrapping vine stems with hay-bands, and other such matter? To be sure, sudden variations in temperature, constitute, in part, a reason for the latter procedure. But one of the chief considerations, as to the value of early autumn planting, remains to be urged, and that is, the high ground temperature of the soil as compared with winter or spring. The decline of the ground warmth in autumn, proceeds, probably, even at a slower ratio than the increase in its temperature in the spring. The soil once heated is slow in parting with its absorbed heat, and also once cooled is but tardy in acquiring it. The rays of a March sun are frequently of great power, but the usual accompaniment of wind may be presumed to disperse it at times as fast as imparted to the chilled soil.

It is a common practice with vine forcers to cover their borders early in the autumn, say, in the early part of September, in order to arrest the departing ground warmth; this is, at least, recognising the value of ground warmth to a tree already growing in the soil; and if so beneficial to established trees, why not so to recently planted ones? Our plant propagators are notorious for using a bottom warmth somewhat in advance of the atmospheric temperature; and, indeed, nature

herself teaches this doctrine in all parts of the globe. Our readers may rest assured, that the same reasons which apply to a cutting, are applicable to a transplanted tree; indeed, the latter is a cutting, and something more. The fact is, that the "callosity" which precedes rooting in many cases, termed by our botanists the granular process, and which is said to be simply a development, or extension, of the horizontal cellular system, is much facilitated by a little extra assistance this way. Now, as a tree is perhaps more at rest soon after it has shed its leaves than at any other time, we would fain steal a march on this crisis, in order to gain a longer period of ground warmth for the granular or rooting purpose. To attempt arguments to prove that the sooner a transplanted tree is rooted the better, would be surely a work of supererogation; it is self-evident. After such arguments, founded on well known principles, we do hope to persuade some of our readers to try early autumn planting; planting even before the last leaves have fallen.

It has been repeatedly stated in these columns, that a good sound loam is the chief article in the compost yard for general purposes, and that it is eminently adapted for high culture in fruit trees. Manures, powerful as they may be, cannot accomplish what loam can; neither can ordinary soils, although the latter, when of sound quality, answer exceedingly well for ordinary purposes. Now, seeing that the platform mode of planting—which we claim as our own—is the mode best adapted for a dwarfing system, as proved in thousands of cases; and that such mode has been a great economiser in gardening expenses, as opposed to the old plan of wholesale border making; surely it will not be thought too much labour or expense, by our friends, to procure as much loam as will allow from three to four barrowsful to a tree. This, with an admixture of the ordinary soil, weeds, litter, &c., will make a capital station for any fruit tree. And this brings us to the character of the loam. Many have expressed themselves puzzled to know what is meant by the term "loam," which seems strange to an old practitioner. Surely, most of our readers have, in their day, gone over a ley newly ploughed; one which, after a shower, will daub the shoes so as to render it a task for "Boots" to clean them. This soil is a loam; it may be a very adhesive one, within a shade of clay; or a lighter one, containing more sand; or what is better, one of neither extreme. Such soils have what is termed an argillaceous or clayey tendency, and the chief property they possess, as bearing on fruit tree culture, is the power of parting with moisture in a somewhat slow way; or to use the countryman's language for a moment, "they cannot be snatched." A steady and continuous root action is the point to be aimed at in general fruit culture; and what we of the blue apron term "loam," happens to be the very best medium whereby to accomplish it. Of course, it is not a mere question of clay, although such may predominate in a given soil; it *may* possess properties of a specific character, which may mar the benefits derivable from it on the score of texture. The irony-clay loams, containing iron, would seem to be most prejudicial. However, we hope enough has been said to advise the uninitiated, and to persuade as to the expediency of autumn planting. Let us watch Sir Joseph Paxton with his new Crystal Palace, and see whether he plants most in autumn or in spring. If our memory is correct, we think that in going over the grounds of that splendid "Palace of the Peak," Chatsworth, about three years since, they were planting Deodars of five feet high, in various eligible situations in the Park, in the beginning of September. There is, *indeed*, nothing like pushing these thing on in *early autumn*, both on the score of principle and expediency. And verily spring comes laden with cares enough of a peculiar character. R. Errington.

AUTUMN-SOWN ANNUALS.

This is about the best time of the autumn to sow a collection of annuals, also some *biennials*, as the many varieties of *Indian Pinks*, Spanish Pinks (*Dianthus latifolius*), and many others; and having been asked for the names of a selection of these oftener than once, I take the market of the day; and go over this beaten ground once more, with all the earnestness of a new subject.

What is the best kind of this or that family of plants? is a most difficult question to answer honestly. None of us would have any difficulty in saying which of all the Queens is the best, but who can say which is the best point of the British Constitution? the best institution in the country? the best family in the parish? or the best shop in the village? Then, if I were to say that the queen of spades was the best, cheap books the next best, the family of The Cottage Gardener after that, and the shop at Amen-Corner the best in the great village, I should expect to find as many followers as I am sure I shall have to-day for my selections of annuals and other things that require our attention at this particular season. From the middle of April to the middle of June is always our worst time in the flower-garden, whether its ornaments be planted in masses, or only in the mixed way. Annuals are uncertain things in summer, as we all know, and few people like to trust to more than a very few sorts of them for keeping the beds full for any length of time, hence the reason why annuals are now so much out of fashion, and hence, too, the first difficulty a new beginner meets with. He is no gardener, but he wants flowers, and would like to try his hand at something cheap to get experience. No plants are cheaper than annuals, but none of his friends know much about them; they are not fashionable, he will be told, yet he must have some, and The Cottage Gardener must do the rest,—must tell him when to sow, how to sow, and where to sow,—their after-treatment, when they will bloom, and all about them.

When the beds and borders of a mixed flower-garden are dressed-up in the spring, and all the established plants have sticks or labels set to mark the places, all the spare ground ought to be immediately filled with the different kinds of annuals that were sown in the autumn, for they are as easily removed and replanted as cabbages, and coming into flower just at the time we are most in need of their aid, it is our own fault if we do not come up to the mark six weeks earlier every year than most of us are now in the habit of doing. Besides all this, one need hardly buy seeds of any annual, except once in a lifetime, and a few shillings spent on them every year would soon furnish more kinds than we should have room for; they all seed as freely as poppies, and a few plants of each kind left on the seed-bed would furnish as many seeds as one could desire. At all events, it is a vulgar prejudice that has been at the bottom of the present neglect of so useful and so gay an assemblage of pretty flowers.

Like all other crops, annuals sown in the autumn are liable to be injured by the weather. A very mild and late autumn is much against them, because they grow too rank, and are very liable to be cut off by a very severe winter. Experience has proved that two sowings ought to be made to meet this case; the first early, or in the first week of September, and the second sowing from the 20th to the 25th. The soil should be light and poor, and the situation an open airy spot, away from where fallen leaves are likely to gather in heaps by the wind. This gathering together is the very worst thing I know of for any seedlings; for if such quantities of leaves rest on the seed-bed for a week, the little seedlings are either smothered, or made so tender and blanched, that the first dry wind or cold night

finishes them. The soil should not be dug more than three inches deep, and the seed should be sown thin; a deep bed is likely to encourage the seedlings to grow too fast and bulky, and so make them more liable to be cut with frost; and if they are thick in the bed, the one helps to draw up the other too weak and spindly. Like many other causes of success in gardening, attention to these little matters is more essential than great skill or practical knowledge.

The best thing in the world to cover seed-beds in the autumn is one-half light soil and one-half finely-sifted coal-ashes, from which the very fine dust and the rough cinders are taken; the first few rains will wash down all the finer particles of this compost for the roots to work in, and the surface is left gritty and porous, so that the little stems and collars of the seedlings have free air and elbow room, instead of being jammed in a sour crust of rank earth, as would be their condition if they were sown on a rich, strong soil. A west aspect is by far the best for them, as then they are less liable to suffer from hard frosty nights, followed by very sunny mornings, or what we call extremes of weather. I have known self-sown *Lobelias*, the little blue ones, and all the varieties of *Portulacca*, with the beautiful *Mesembryanthemum tricolor*, come up as thick as grass, after a hard winter, on gravel paths, and also on paths made with coal ashes, and these are among the most delicate things we handle in a young state; but I am satisfied that I could make up a seed-bed for them and similar things, in which I could get them up more safely than in pots under a rough treatment.

The way I would go to work would be to lay a coat of rough cinders on some dry ground having a west aspect; then spread a quantity of poor soil over the ashes, and water it in with a rose-pot, so as to fill up every open space all through the layer, which might be four or five inches thick; beat this well down with the back of a spade, and put one inch of fine coal ashes and sand on the top to sow the seeds in; the sand which is washed off the roads with the autumn rains is the best. I never observed that these seedlings came up before the following April, but I have known them to flower and make better plants as soon as those sown in heat in February.

Whether it is best to sow such seeds as soon as it is ripe in the autumn, or to keep it until February and then make the rough bottom, I cannot say. We know that new seed of many kinds of annuals is not so good to sow in the autumn as old seeds, because the newer the seeds, the more strong and healthy the seedlings, and, therefore, the more liable to suffer from a hard or long winter. It certainly would be worth while for some great gardener who has plenty of seeds, ground, and materials at his elbow, to try an experiment or two in the spring on this cold system of rearing, or trying to rear, the more tender flowers and vegetables, as *Love Apples*, *Capsicums*, *Gourds*, and so forth. Like self-sown plants, the crop from this plan would give far better plants than any of us can rear in our refined ways; a cold frame might be put over the rough bed, with a brick under each corner, to let the wind play as it lists, and the glass lights might be nailed down, or kept off altogether while the weather was fair; but I would prefer the glass to be constantly on.

Orchids have been found in Mexico, beautiful ones, too, in full flower, and the thermometer indicating 36° in the morning; and no doubt but some of our finest greenhouse plants have to stand some degrees of frost in their wilds, and would do the same here, if we could but grow and ripen them as they do in the wild state. At all events, it would be a great step gained if we could hit off some easy way to help the amateur of small means and little room to raise many of the more tender things for which we now provide hotbeds and hot-headed gardeners to manage them.

The red and white *Clarkia pulchella* are the only two *Clarkias* worth growing, and no winter kills them when self-sown. *Collinsia bicolor* and *C. grandiflora* are the two best of that family; they also are hardy enough to stand most winters. The two yellow *Eschscholtzias* are as hardy as wheat or barley, and though not annuals, they do much better if sown and treated as such, first in September, and secondly about the middle of April; if they are to be transplanted, it should be done when they are quite young. The blue and spotted *Nemophila insignis* and *maculata* are the best of them, and the whitish one, *N. atomaria*, third best. They all pass over almost any winter, and come into bloom before April is out. *Eucharidium concinnum*, and a seed sport of it called *grandiflorum*, are among the first gems that ought to be grown in any garden, and they stand a smart winter; to say that they are diminutives of the red or purple *Clarkia*, will give an idea of their size and flowers. *Godetia Lindleyana* and *G. rubicunda* are as good as they are gay, and as hardy as a Scotch crocus. They are the best of a long list of Goodies, and they will be the brighter in flower, and more manageable in plant, if they are planted in the very poorest soil in the kingdom; but, recollect, if so poor, it must be deep and well-worked. You might call a hard, dry bank poor, and no annual would get a holding on it, and still it might be so good as to grow an oak. Stinted growth is quite a different thing from subdued growth caused by poor, sandy soil well tilled. The flowers of all the *Godetias* show brighter when the plants are in this subdued growth. *Godetias* are a branch from the *Œnotheras; Lindleyana* is a beautiful purplish *Œnothera*, and *rubicunda* means that beautiful tint of pink caused by a modest blush—the finest tint in nature. Let these two be grown as I say, and they will become general favourites once more. *Gilia tricolor* is the best of them, and is as hardy as any: this and *Collinsia bicolor* are the two best lilac, or imitation of lilac-colour we have. *Erysimum Perofskianum*, a tall yellow flower, like a turnip flower, when sown in September, planted out at the beginning of March, and trained down to the surface of the bed as it grows, comes into bloom at the beginning of May, and lasts to Midsummer, or longer, and, so treated, is one of the very finest beds ever seen in May; but if allowed to grow its own way, you might just as well have a bed of seed turnips. A second sowing of it the first week in April, and again about the end of May, would carry it right through the season till the frost came. Six or seven plants of it, put into pots about the new year, would come in finely for the greenhouse in April; but it will not stand forcing—the protection of a greenhouse or pit is as much as it can safely endure. *Callichroa platyglossa* is another style of yellow, a composite, and a much dwarfer plant than the last. The flowers are bull-eyed, like a daisy, large for the size of the plant, and there are two shades of yellow in them. One should always contrive so as to have these two in flower every May, when yellow flowers are scarce. *Platystemon Californicus* and *Limnanthes Douglasii* are two yellowish kinds, which are grown for making up this colour in May; but they are at best but second-rate, if so much. *Bartonia aurea*, a beautiful clear yellow flower on a weedy-looking plant, sown now, and transplanted into very poor, light soil early in April, will flower in May, and be much better than under any other treatment. The flowers are of the very finest, as rich as those of Alamanda; but the plant is no better than a dock in good soil. *Leptosiphon androsaceus*, a very dwarf lilac, or purple-and-white-mixed flower, stands the winter well, and would flourish on the top of an old dung-heap better than elsewhere, so no bed can be too rich for it; in poor soil, the first sunny day, or, at least, the first

week of a drought, finishes it. *Lupinus nanus* (what a pity that gardeners do not sow large breadths of this very beautiful dwarf Lupin every autumn) has quite a different character when allowed to grow on slowly all the winter. It would do to plant out in April, where *Lobelia racemosa*, or any dwarf blue plant was too tall late in the season. It blooms from May to the middle or end of August, from seeds sown about the middle or end of September, provided the plants are not allowed to ripen any seeds. Another sowing, about the first week in May, would carry it on to the middle of October. *Silene pendula*, *S. compacta*, and *S. Schafta*, are the best of the Catchflies, and are always best from autumn sowing. I once saw a thatched cottage, covered with *Silene pendula* in bloom about the middle of May. The *Virginian Stock* flowers in April, if sown now, and all the varieties of the *branching Larkspur* will bloom most part of the summer, if sown early in September. *Corn-flowers* (*Centaurea cyanus*, and *depressa*) sow for cut flowers. D. BEATON.

CLIMBERS FOR WARM CONSERVATORIES.

A VARIETY of enquiries have reached us on this subject, which will perhaps be best met by answering the following questions.

1st.—What do you mean by a warm conservatory, or greenhouse? A house where the lowest average nightly temperature in winter ranges from 45° to 50°. Even in severe weather it should seldom fall below 40°. On the other hand, a cool house, where preservation is the chief object, may range from 10° to 5° lower when the weather is severe. In fine, mild weather in winter, the warm greenhouse may average 50° at night. In severe frost it will be safe at from 40° to 45°. In all cases where sun can be got, the house may be allowed to rise from 5° to 15° by the heat of its rays, and be early shut up. In fact, air should be given in winter *chiefly* to keep the atmosphere sweet, and prevent the plants getting drawn. This latter evil is most likely to happen in dull weather, with artificial heat applied. A rise of temperature with sunshine will seldom produce such a result. The king of day—the absence or presence of bright light—should always be our guide with regard to temperature. In such houses we expect to see plants slowly growing all the winter, many in full bloom, and tender plants kept safely, so as to bloom freely in summer. For this latter purpose few things are more appropriate than climbers. Many, considered rather tender, are quite at home when they get elevated enough to scramble over the roof, and far enough from the glass, say one-and-a-half to two feet, to prevent their being suddenly cooled by radiation in a cold night. As many of our stove, or tropical plants, do better out-of-doors in summer than when pent up in a hothouse, and yet would only maintain a lingering existence in a cool greenhouse in winter, so many of these climbers will bloom in a warm greenhouse as freely as in a plant stove; nay, much more so, as the partial check in winter is useful for inducing a profusion of bloom.

2ndly. When, and how, should I plant them? It might be done carefully in this month of August, but I should prefer April or May; as then they have got the whole season before them to grow freely, and as, unless the plants were very large, you could not expect much bloom the first year. If planted out, the position, if possible, should be near the heating medium, whether pipes or flues, as this will keep the roots more comfortable. It will also be advisable to make a small pit, say two feet square, with bricks, &c., for each plant, and deep enough to allow plenty of rough matter at the bottom communicating with a drain. The separate pit for each will not only tend to prevent rampant, unripened growth, but you can easily change, and renew a plant without disturbing its neighbour. If not planted out, wooden boxes will be preferable to any kind of pots, as the roots will be less exposed to variations of temperature. The soil, in general cases, should be light and open, as luxuriance can always be obtained by surface-dressings, and manure-waterings.

3rdly. Will *Passiflora Billottii* bloom in such a house? Yes, and a pretty thing it is, though I think an error was often committed in those who sent it out speaking of it as being as hardy as *P. cœrulea racemosa*. The chief fault I find with it is that in such a house the flowers do not expand freely in dull weather, but drop when three-parts opened. My plant has hardly got lofty enough yet to show what it can do, but my present impression is that it will require a sunny position in summer, and an average temperature in winter, above, rather than at all below 45°.

Passiflora Kermesina is a plant of a very different habit, producing great abundance of its beautiful crimson flowers, and this (though not lately) I have had in great profusion in such a house. When its young shoots, covered with opened and progressing buds, are suspended from an arch or rafter, the appearance is very captivating. In the people's Crystal Palace there will be room to show off such plants in all their grandeur. This last one by no means requires great room, as it may be trained round a trellis, and flower freely in a ten-inch pot. When the *Billottii* is tried, this might also have a niche in a warm corner, but should not be planted out until it has a good shoot, at least from eight to twelve feet in length.

4thly. Can I bloom and fruit such *Passifloras* as *quadrangularis* and *edulis*, in such a house? No; as respects the first. Yes; as respects the second. *Quadrangularis* requires a strong, moist heat when growing, and a high temperature to *set* the flowers, and even then a little dusting of the pollen by hand will be necessary. The fruit gets to the size of an ordinary melon, and is much liked by some people. The flowers are truly grand; but I have never seen them in anything like perfection unless in a plant stove. In the warm conservatory, *edulis* will be just at home. It blooms freely, but the flowers are whitish, and not at all striking when contrasted with their fellows. It fruits, also, very freely, without any artificial pollen dusting on your part. The fruit, when ripe, is nearly the size of a hen's egg, and of a purple colour. The flavour is very peculiar,—acid, yet rich, and is generally relished. Where the fruit is liked, the plant deserves a place, even on that account.

5thly. Will *Bignonia venusta* and *Chirere* blow there? One of the best of the Bignonias for such a place is *jasminoides*, but it should have a pit, or a confined place for root-action. *Chirere* I have also seen doing very fairly in such circumstances; but I think it would be vain to attempt *venusta*. I have not grown the latter for many a day, and yet I think it is the most splendid of the race. It is a native of warm positions in South America, and seems to like heat as well in this country as in its native home. I have seen it good in many positions, but best of all when planted in a pit, in the bed, or bark-pit of a stove. Then, with plenty of room, pruned rather close back in winter, encouraged to grow in spring and summer, it became a truly gorgeous object in autumn.

6thly. Will *Mandevilla suaveolens*, *Ipomœa Learii*, *I. insignis*, and *Stephanotis floribunda*, answer in such a house? Yes; all of them, if strong, healthy plants are used. Small, dwindling things will be apt to go off the first winter. The *Mandevilla* is a sort of Citizen-of-the-world plant, thriving against a wall, in greenhouses, and plant stoves, but a warm greenhouse or conservatory is the position in which it appears to greatest advantage—its young shoots, clothed with its bunches of white flowers, dangling in wild profusion, or running

along a wire in more massive wreaths. This is well worthy of a rafter or arch in every greenhouse. *Ipomœa Learii* is still more at home in such a house, though a native of Ceylon. It will lose many of its leaves in winter, but that is a matter of no consequence, as it may then be pruned back very freely, and it will always bloom better on a few pretty strong shoots than on masses of smaller ones. The flowers will be as large, more intensely blue, and the leaves not so large, as when the plant is grown in a stove house. I have nearly destroyed a splendid plant by extra severe loppings, as it threatened to monopolise a whole roof. Even now a bit of it, here and there, mingled with other things, is very beautiful. On dull days, the flowers will maintain their beauty until the afternoon. On bright days, if not well shaded, they will shrivel up by mid-day. Unshaded, about nine o'clock is the time to see them in their glory. The house in which this plant used to be such an ornament, and which, even in its lopped state, it beautifies now, has frequently been at 40°, and, for short intervals, below it in winter. As alluded to above, no leaves, except a few small ones, need be left on the plant in winter. It is rather subject to a white scale; the best mode of getting rid of which is to prune in rather close, and then scrub the stems with soft-soapy water. *Ipomœa insignis*, often termed *Sellowii*, is quite a counterpart in colour, being pink; it flowers equally freely, but is not quite so hardy for a rafter, as the stems are apt to die back to a tuberous root. It is well fitted for a round trellis. One of the most beautiful of all the *Ipomœas*, namely, *cœrulea rubra*, would just be at home in such a house, and in general would do best if grown from seeds, sown in a hotbed in spring, the seedlings pricked, and potted off, and got into such a house in May. The extreme beauty of the flowers would more than repay the trouble. *Stephanotis floribunda*, I planted out last summer. The house was several times at, and below, 40° during winter, but only for short intervals; mostly ranging from 45° to 48° at night, with a good rise from sunshine. A good many of the leaves fell, and several of the youngest shoots damped off quite back to the older wood; it grew on, however, in the bright days of April and May. The shoots have got some twelve feet in height, and are in bloom, and showing bloom at almost every joint. When once I get it high enough to span an arch, or mount a rafter, I feel assured the plant will just be in its element. Even now, the sweetness diffused through the house by its dozen or two of opened bunches of flowers is a sufficient reward. If the autumn is fine there will be abundance more. While on the subject, I may mention that this is a very accommodating plant. Whether round a trellis, in a pot, or round an arch in a conservatory, I could hardly take it upon me to state what is the best method to adopt as respects pruning and training. Some of my coadjutors will, no doubt, assist, or correct where I may be in error. Two modes, my limited practice with this gem of a plant has suggested.

First.—*When the plant is wished to bloom very fair every year.* In this case, when done flowering, the plant should be thinned, rather sparingly pruned, removing as much of the old wood as you can do, so as to have a sufficiency of the current season's growth. Then, after this, growth should not be so much attempted as ripening the wood. The plant, therefore, should stand right in the sun, and just have water enough to keep it from flagging. The young shoots that come from the well-ripened buds will yield you the chief part of the flowers.

The second mode is to partly sacrifice one year for a more regular and gorgeous display in the succeeding one. In this case, the plants are pruned back freely, the young shoots that come are thinned-out to the desired number; shade and moisture are freely given them to encourage growth; the treatment, in fact, the opposite of causing flower-buds to form. Then, towards the end of summer and the autumn the treatment is reversed; light and air are given freely; water is gradually withheld. The plants are kept cool in winter, and when excited into growth next spring, almost every bud from those shoots grown and ripened the preceding year brings its masses of fragrant white blossoms. By thus sacrificing a season to *growth*, many other plants would present a more uniform appearance than when grown and bloomed every year. A first-rate gardener told me it is also the only way to produce *astonishing* effects with those beautiful orchids, the *Dendrobiums*, and others. R. FISH.

THE HOLLYHOCK.

(*Continued from page* 336.)

THE seedling plants of the Hollyhock being transplanted, as directed in our last, the only care they require, during the spring and summer, will be keeping them clear of weeds and insects, the most destructive of which is the grub at the root, and the red spider on the leaves. The grub is the most difficult to destroy; there is no effectual way of doing so excepting that of searching for them near the leaves when the Hollyhock is planted. Here we have had such a dry season in the spring that the grubs could not travel from plant to plant, and, in consequence, they have escaped; but now, since the rain came, they begin to creep about, seeking their food and devouring it. We could forgive them if they would be content with a leaf, like a caterpillar, but nothing will serve them but the stem, just near the surface of the soil. Nothing will prevent their eating off a young plant but catching them.

The red spider is an enemy to be guarded against with every precaution. In wet seasons the rain and moisture prevent the increase of this pest, but in dry weather it increases fast and fearfully. As soon as spots on the leaves are perceived it is certain he is at work; then use the syringe freely, at least every evening, and if that does not check him, further means must be used: mix some sulphur with water, and sponge every leaf with it. In the early stage of growth this will not be much trouble; at least, where valuable kinds are cultivated, it will be worth that trouble to get rid of them.

Transplanting.—When the plants have attained some size, and begin to be crowded, it will then be prudent to prepare a piece of ground large enough to contain these choice seedlings at such a distance from each other as to afford them space to bloom. This preparation will consist of, first, a good coat or covering of well-decomposed dung; then dig the ground over, at least a good spit deep, and mix the manure well with it; if it is turned over twice it will be all the better. If the site chosen for the purpose be wet, it must be thoroughly drained. This may appear a considerable amount of trouble and expense, especially for seedlings, but it is, nevertheless, necessary to be done, in order to give them a fair chance to show what they are worth at once. If this trenching and manuring is done about the end of July, the plants may be transplanted into it by the middle of August, which will give them time to become firmly established before the winter. Some may show a disposition to spindle up into flower; such should have the flower stems nipped off at once, which will cause them to produce stocky shoots, not flowering stems. They should be planted out in rows at least eighteen inches apart, or, if ground is plentiful, let them be two feet between each row, and nine inches from plant to plant in the row. When the cold weather advances, and the growth in consequence is stopped, let the surface be stirred, and a thin layer of litter spread between

the rows; this will keep out the frost, and preserve the roots greatly.

In the spring following, this litter should be lightly forked over, mixing it with the soil as much as possible, care being taken not to injure or disturb the roots. The plants will then be strong and healthy, and able to send up strong flower-stems. As they advance, let each have a stake to tie it to, to prevent the winds twisting off the stems. As the flowers appear, it is a season of some anxiety and pleasing excitement to watch the opening blooms, and discover the good ones amongst them. As they appear, let each one possessing good properties be marked, and described in a book kept for the purpose; but let every single one, or such as are decidedly objectionable in other respects, be pulled up and thrown away at once. T. Appleby.

(*To be continued.*)

JOTTINGS BY THE WAY.

Being on our usual autumnal tour through the north of England, we have jotted down a few notes on things we have had the privilege and pleasure of visiting in the nurseries and gardens we considered worthy of notice; and we think such notes of sufficient interest to send them to the editor to be published, for the information, or, at least, amusement of the readers of The Cottage Gardener.

We are happy to find that the taste for Coniferæ is on the increase. Mr. C. Scott, gardener to W. Vavasour, Esq., at Hazlewood Castle, near Tadcaster, in Yorkshire, has been engaged by that gentleman to inclose about ten acres, or perhaps more, and plant it with the best and hardiest of that interesting and useful tribe. Though only planted about eighteen months ago, they are making already considerable growth. Mr. Scott plants each tree upon a slightly elevated mound of prepared loam, and with the best effect. He informed us that it is in contemplation to increase the space for this purpose to a great extent. Now this planting of these rare and choice plants renders the place exceedingly interesting both to the owner and the visitors. James Watts, Esq., of Cheadle, near Manchester, has also directed his gardener, Mr. Sturdy, to ornament his pleasure grounds with a considerable number of Coniferæ. We saw this place last autumn, and there was scarcely a specimen in it, but now there may be seen avenues of them. We were much struck with some *Araucaria imbricata*, upwards of ten feet high, that had been removed nearly a hundred miles with the most perfect success, though they had been planted in the place they were brought from for at least seven years. This proves that there is no necessity for nurserymen to keep this noble tree in pots, cramping its roots and stinting its growth. It shows that it may be transplanted, when of a considerable size, with safety, even a great distance, and, of course, with still greater safety if on the same estate.

Wilton Hall, near Blackburn, in Lancashire, Joseph Fielden, Esq. This place has also been ornamented with Coniferæ to a considerable extent. The gardener, Mr. Wilson, assured us, that though the place in winter is much colder than many other places in the neighbourhood, the *Araucaria imbricata*, *Cedrus deodara*, and *Cryptomeria japonica*, stood the winter well. The pinetum is situated on the side of a lofty hill, almost high enough to attain the dignity of a mountain; and here, amidst a number of Scotch firs, planted as nurses, most of the kinds usually considered somewhat tender flourish surprisingly; in truth, a lesson may be learnt from that fact—low, sheltered situations are not the places to give a strong and hardy constitution to such plants. The warmth of the summer, it is true, in such sunny nooks, where no cold blasts can blow, will cause the plants to push into vigorous growth, but such growths are tender, pithy, and ill-ripened, and are, in consequence, rendered in most cases unable to withstand or bear the chilling effects of the winter frosts; whereas, on the mountain side, where temperate breezes are more prevalent, the young wood acquires early a degree of hardness that enables it to bear such more moderate changes with impunity. At a place in Cheshire we saw an illustration of these laws of nature. The place is called Astle Hall, situated near Chelford, on an almost level plain. I. Dixon, Esq., the owner, several years ago, had some Conifers planted in front of some tall trees, with the idea that the latter would shelter these choice, and, most likely then, very expensive, plants. Last winter, though, comparatively speaking, a very mild one, was severe enough to nearly kill a fine specimen of *Pinus insignis*. The gardener, Mr. Davis, stated that every leaf was turned brown, and he fully expected it was quite killed; but when the warm weather returned, the old wood sent forth shoots, all the young ones being quite destroyed. Now, this very species, on the much colder hills of Lancashire, at Wilton Park, was not injured in the least. This is a fact worth knowing, in order to avoid such almost fatal consequences of sheltering too much. T. Appleby.

(*To be continued.*)

GERMINATION OF SEEDS IN AUTUMN.

It cannot have escaped the notice of the most careless observer how much more slowly seeds vegetate after the end of August than they do in the spring and early summer, while, to all outward appearances, the ground seems in better order now than then, so far as its temperature, and the other conditions which regulate its fertility are concerned. *Plants*, more especially those of the Cabbage-worts, make greater progress, unless checked by some adverse circumstance, as want of rain, &c., but seeds do not rapidly vegetate. A glance at that all-important law of nature will unravel the mystery,—we shall then see the beautiful design of seeds being committed to the earth in the autumn, and remaining quiet until returning spring arouses them into life again; this is more especially true of such kinds as by their constitution are unable to bear the severities of winter in so young and tender a state as they must necessarily be when just unfolding their rough leaves, for the first time, to "November's cold and chilly blast."

Now, while nature may be thus wisely sealing up and putting away the germs of future vegetation in the shape of seeds of various kinds, she is actively engaged in urging on such as have not performed the duties allotted them in that field of industry. *Celery* grows with a vigour unknown in July; *Spinach* advances apace; while the whole of the *Brocoli*, *Turnip*, and *Cabbage* tribe, aided by the copious dews common at this period, make, for a time, rapid progress. The lesson taught by this beautiful arrangement ought not to be lost upon us; it should make us see the folly of sowing various seeds at times when nature refuses to assist in their germination—yet we do persevere in our opposition, and, trusting to the artificial assistance we are able to afford, we commit seeds to the ground at the forbidden time mentioned, and, with some little coaxing, we contrive to get a great part of them to grow; so far has successful and long-continued cultivation been able to overcome the dislike that nature has to her hidden treasures bursting from the salutary bonds imposed upon them in the face of the inclement season fast approaching. Thus *Cauliflower* and *Lettuce* seed will germinate, and the young family thrive too, if nursed a little at the time when they are literally "breaking the shell;" that object being accomplished, they may be subjected to a little more hardship, and taught the common lesson of society, that as they are now fairly into the

world, they must rough their way through it; this "turning out," however, does not mean that they are to receive no further notice; on the contrary, their welfare is too important a matter to leave to mere chance,—the same interest which brought them thus far must still watch over them, and though for a few weeks the treatment they receive may appear rough, its object is but the proper discipline of its protégées, and by-and-by the same fostering care is directed to them again, but in another shape, when the aspect of things outwardly tells, in unmistakeable language, that hard weather is fast approaching, and that protection will be required. This is granted in a modified sense; and, by the exercise of similar acts of prudence, a brood of lettuces and cauliflowers are coaxed through the winter, and early in spring find themselves advantageously placed so as to command an early maturity, of which they take due advantage. But then there is a chance of their hurrying on to a premature ripeness, which, in Cauliflower, is called buttoning. Here the skill of the cultivator is again brought into action; he can, by long experience, tell pretty well the probabilities of a plant's future intention; if he knows its past history, and if the seed be from a good kind, and not sown too early, he can form a good guess (barring accidents) how it will turn out.

Now, the plain routine of the matter is this: the result of many years experience has taught us that the beginning of September is the best time to sow *Cauliflowers* to stand the winter. We generally sow on the first or second, and if the weather be very dry, watering and shading, as recommended for cabbages, &c., must be attended to. If soddening rains, and cold weather occur, then some spare lights put over the beds will be of service; at any rate, assistance must be given so as to obtain an early germination, and care taken to preserve it afterwards. As there are few things in the gardening way of more consequence than the well-doing of the early cauliflower crop, and as any misadventure is less easily rectified in this than other productions, we strongly urge on the amateur to keep a sharp look out for the various enemies that seedling plants are beset with, as well as to coax the seed to grow, by warmth and moisture, without blistering the ground by allowing the sun to shine unobstructed upon it. After watering, if mats are laid over it, much of the sun's warming rays would be transmitted through them, and yet the ground would not have that caked, sealed-up appearance it has when the sun dries up the surface into a sort of band, skin, or cake, unkind and almost impervious to the delicate seed-leaves of a plant induced to trust itself on the tender mercies of an untoward season. Some mitigation of the evil, with a benefit to the young crop, in addition, may be had in mixing charcoal dust with the soil. This, besides being a fertilizer of no mean power, is an enemy to that grub which forms the "club" in the stem of young plants of the Cabbage-worts. Let, therefore, a part of it be dug in with the top soil of the bed, and the seed be sown (watered if necessary), and on the middle of the first few bright days shade it as above, taking it always off at night, and the first gloomy day may be taken advantage of to discontinue it, or gradually so.

Unlike most other vegetables, the varieties, or so-called varieties of cauliflowers are few. Many seedsmen, or seed-growers, have affixed their name to some "superb" kind, but beyond that there seems little distinctive difference between the kind commonly grown, and those improved varieties and the late cauliflower. Certainly the *Asiatic* belongs to the section of Brocolis, such as the *Walcheren*. Cauliflowers deserve more attention, with regard to the purity of their seed, than many other articles. Sown to come in at a time when our tables are deficient of several vegetables of similar character, its loss cannot be endured without disappointment.

Lettuces, of the kinds formerly mentioned, may also be sown in a similar way to cauliflowers, only, as most of them will have to stand the winter where sown, let the bed be on some well-sheltered place, and so as to admit of a covering of some kind or other in severe weather, should such occur. The plants of former sowing may also be planted out to stand the winter, and take care that the slugs, and other enemies, do not prey on the newly-come-up seedlings, nor yet on the newly-turned-out plants. *Spinach* may also be sown, if not done last week; and on all favourable occasions earth-up *Celery* as required. Thin *Turnips* sown last month, and if the weather holds dry, let every inch of vacant ground be dug, or otherwise stirred, in order to benefit by an atmosphere of more utility in that respect now than in November. J. ROBSON.

THE BENEFIT CLUB.

By the Author of "My Flowers," "The Cottage Lamp," &c.

I AM going again to touch upon the subject of Benefit Clubs. I see another instance of their value in the case of the cottage gardener whose miraculous conversion I have noticed in my last paper; and having long felt strongly their use and importance to the labouring classes, I am glad to be able to add another proof of it, in the hope that it may lead attention to them, where, perhaps, they have never existed.

When a poor man becomes sick or past work, what is he to do? Is he to run into debt? How can he discharge it? Is he to go to the union? It is a refuge provided for the destitute, and, no doubt, planned and carried out in the best manner that can be devised; it may be so; but after a life of toil and hardship, the poor man loves the calm and free enjoyment of his honest old age, by his own fireside, among his family, and the beautiful things of nature, where he has dwelt since he left the cradle. Let us make large allowance for the honourable tillers of the soil. Some of us may know nothing of a Union; we may have no cause to know or fear it; we may be easy in circumstances, or too much raised above the humbler classes to suppose for a moment that we shall ever need its shelter; and this very feeling may make us think lightly of the poor man's feelings when he is called upon to give up his British "Castle," and go to pass the rest of his days in a union workhouse. I have heard hard things said, very stony sentiments uttered by the affluent, regarding the reluctance of the poor to give up independence, so sweet to a son of Britain, and place themselves in a situation of restraint and separation from their families for the rest of their lives. We do not sufficiently feel for our poorer brethren; we do not put *ourselves* in their place, and *then* think how it would be. Restraints must, and ought to exist, where numbers are joined together; men could not live without them, all would otherwise be wrecked and ruined. But can we be surprized at people disliking this in their old age? Soldiers, sailors, are restrained—strongly, powerfully, restrained—but they have chosen their profession, and are, besides, always looking forward to the time when they shall return to Old England, and spend their latter days in peace *at home;* but the honest labourer, may God bless him! has nothing to look to in *his* old age but starvation or the Union! This should not be; but the poor abound in our land, and perhaps it is an impossibility so to order our political economy as to provide a remedy; but *I am sure* that if Benefit Clubs were established wisely, extensively, and generally, throughout the country, largely supported by honorary members, and watched over by the under shepherds of the flock—I say, I feel sure, that more would be done to lessen the poor-rates, civilize and improve the people, and secure their comfort and happiness in old age than any other plan that could be adopted. There is a self-supporting principle in Benefit Clubs that is wholesome and honourable; the poor man feels that he is not living on charity, but on a general fund to which he has himself contributed his proper share; and he must be satisfied, too, to know that at any rate part of his earnings have been wisely employed.

John F—— sits comfortably in his kitchen, although it is in loneliness; but he has kind and respectable neighbours, and he does not, therefore, feel his solitude oppressive. I said to him a day or two ago, "You feel now the comfort of your club, John." "I do, indeed, ma'am," he replied. "What do you receive weekly?" "Seven shillings, ma'am. A sick member receives full pay for six months, and half-pay afterwards." "Well," I said, "but suppose now that you are unable to work for the rest of your life, how long would your half-pay continue?" "As long as I live, or as long as the funds hold out, ma'am." "And what do you pay in monthly?" "Fifteen-pence." "And what would you have done, supposing you did not belong to a club?" "Gone to the union, ma'am; there's nothing else for it." "I wish every man in the parish belonged to a club," I remarked; "they are the only things to do him good." "It's a pity they are not better supported," John replied. "None of the gentlefolks helps ours, so there's nothing more than we pay ourselves. But," he added, "if I was a rich man, if I had as many bank-notes as I could carry in my great basket, I would not give one shilling to support a club that wastes money upon no good. Here, one club gives four pounds at Whitsuntide for music, and eating and drinking. One dinner is all very well the day the club meets, but then they are at it again next day, and it all costs money. Let the money for the band and the second dinner be put by in the fund, it all helps; and nobody's a bit better or wiser for the music and the beer afterwards."

John's view of the matter is a sensible one; but many men, we know, have many minds; and unless there is some wise and weighty person to form and enforce rules, evils will mix with the good.

There is a club of young men in the parish also, lately established by a clergyman resident in it, but not the incumbent. This little brotherhood is conducted very differently. The promoter superintends it himself, presides at the meeting, which is not held at a public-house, and by his presence and care prevents the excesses too often arising from the *un*disciplined clubs.

It appears to me, that if the poor men in a parish were enabled to join a life club by their richer neighbours' assistance, that would be scarcely felt by a gentleman or a farmer, which would support a fellow-creature in sickness and old age. Some poor labourers, with large families, might be unable to meet the monthly demand, in which case, a trifling sum per month, from the master for whom he works, would insure him comforts which perhaps no master could supply when sickness or old age arrives; and, therefore, effect an amount of good that can only be seen and felt when the time of trial comes.

The blessing of the Lord is never withheld from earnest and active endeavours to do good, when they are undertaken with a single eye to His glory, and the benefit of the poor and needy. Let us not think of our own pockets, except in so far as how to do most with that which we have to give; but let us think of the British labourer, and how best to promote his real good. To provide for his *old age*, is a duty incumbent upon all who have this world's goods, and a sacred duty too. It should also be carried out *spiritually*; and this may be largely effected by means of these clubs. A *man of God*, presiding over his flock, needs not a feeble pen to tell him what to do, or how to do it. He has his Master's work at heart, and his Master's rules to go by, and from *them* he will frame his little building, and order his household. If the foundation is Jesus Christ, however small and feeble the super-structure be, waves and storms shall not prevail against it. That is *the Rock;* and whether we frame churches, or constitutions, or kingdoms, or households, or only humble Benefit Clubs, let us see *that we are on "the Rock;"* for "the fire shall try every man's work of what sort it is," and no blessing can or will be found where Jesus Christ is not made "the precious corner-stone" and the "sure foundation."

The circulation of THE COTTAGE GARDENER is so extensive, that I feel I am addressing these remarks to the British public. May they be the means of promoting the good of our poorer brethren.

COCHIN-CHINAS *v.* SPANISH FOWLS.

I HAVE been much interested in the remarks of "Gallus," on the paper on poultry that appeared with my name attached to it in THE COTTAGE GARDENER of July 29th. If I ask you to give insertion to my present communication, it is no less with a view that, together with your readers in general, I may profit by the observations of one who is so evidently master of his subject, as that I may also avail myself of the opportunity to add a few words to what I have already urged in favour of the Cochin-China race.

Two candidates, I find, for pre-eminence in our poultry courts, have opposed my own nomination—and formidable ones I at once confess them to be, in many respects; the more so, indeed, as my own knowledge of one of them, *Dorkings*, is by no means so perfect as I should wish, and still hope it *may* be.

Together with Dorkings, Spanish fowls are mentioned by "Gallus" as more likely to be kept with profit by the farmer and cottager than any other race. Now, your readers will remember that I first expressed a difficulty as to Spanish, from their cost. "Gallus" says, in reply, that it certainly *is so at present, but that another year their price will be much reduced.* Now, first-rate Spanish, as dealers tell me, are more difficult to obtain than any other variety of fowls, not even excepting Cochin-Chinas; but the latter, for the last two or three years, have even increased in price, and glad as I should most certainly be to see Spanish birds more easily attainable, I hardly venture to expect that their fall in value can be so immediate.

"Gallus" seems to have, indeed, prospered with his chickens of this race, and, with great good fortune, to have avoided the Scylla and Charybdis of bad eggs and dead chickens, that have during the present year disheartened so many of my Cornish neighbours; wisely, therefore, will they avail themselves of his stock.

Spanish "and" Dorkings, I see, would, in his opinion, both take precedence of Cochin-Chinas, with those "*whose object is good returns;*" and few, I believe, in these days, will be indifferent to this great recommendation in the occupants of their poultry yards.

But here I must observe, that but few persons, in the position of farmers or cottagers, have the means of keeping *two distinct breeds* of fowls, so that we must make the selection of *one or the other*, as best suited to their requirements. It must be, therefore, either Spanish *or* Dorkings, not Spanish *and* Dorkings, as "Gallus" intimates in THE COTTAGE GARDENER of the 5th inst. When poultry-keepers are so fortunate as to have more than one *walk*, they can safely indulge their taste for variety; but the cottager *always*, and the farmer *generally*, is limited in this respect. Nor must we here omit an earnest caution, to avoid all risk of crossing our birds with other races; for no matter how meritorious the first results, a very few generations will be sufficient to satisfy their owners that a pure stock would have been better policy, and this for reasons which need not be referred to here. Now, as regards the conflicting claims of Spanish and the Cochin-Chinas, let us see what can be said by their respective advocates.

First, as regards them as *layers*. The Spanish hens in the possession of "Gallus" have laid, according to his statement in THE COTTAGE GARDENER, "*six eggs per week, since February last;*" but great productiveness as this most assuredly is, we still find that his Cochin-Chinas "*laid even more eggs than his Spanish.*" Now, as to the relative market value of eggs, I have not found, on ordinary occasions, that any higher price is given for the larger eggs, excepting, of course, such as Bantams; while, on the other hand, a preference is certainly given for those of the rich brown tint, which distinguishes the Cochin-China, and is supposed to indicate its superior quality. We must remember, too, that Thomas's kind employers gave him his fowls for the special purpose of supplying *him with eggs*, which Thomas's fair bride would probably, in due course, convey to market. Now, although his master's Cochin-Chinas had, hitherto, laid more eggs than the Spanish, Thomas's choice was, undoubtedly, a wise one, for his *special* purpose; and had I been the fortunate one to whom the option was given, my selection would have been the same; for I have always thought, that wherever *eggs* were chiefly regarded, Spanish would have the preference; while, for the general purpose of

those farmers and cottagers who, for profit, look to *chickens* no less than eggs, fowls that will both sit and make good mothers are best adapted. It also tells well for the Cochin-Chinas, that even with the time lost in sitting and rearing their broods, a larger number of eggs was laid by them than by their competitors, who were never thus occupied.

While speaking of Spanish fowls, I may observe that "Minorcas" was the name commonly given in this neighbourhood to a fuller-sized fowl than the true Spanish; it wanted more or less the distinguishing characteristic of the white cheek, and their plumage was generally a glossy black, occasionally mottled. I kept them myself for several years, and remember but one hen ever wanting to sit. Eggs were given to her, and a brood hatched and reared, but the mother soon after died with every symptom of consumption, though previously in apparent health. My recollections of poultry in Spain recal a very varied promiscuous race; and some few years since, I bought, out of a Spanish xebecque that stress of weather had driven into our bay, some fowls, whose plumage, in all respects, resembled a brown Indian silk fowl. It would be interesting to learn whether the pure bred birds, now in the possession of "Gallus," are from any recently-imported stock, or allied to Mr. Barber's Andalusian fowls. I am told that many good Spanish birds are now imported from Holland and Belgium.

So much, then, for our respective candidates as regards their laying properties. With respect to their fitness for *the table*, I should wish to be clearly understood, when I claim for Cochin-Chinas no mean place in the estimation of those most useful functionaries, our cooks: I repeat, that any of the long-legged varieties must at once be discarded for this purpose; to my own eye they are unsightly in the yard, and become still more so on the dinner table. Most correct, therefore, must I consider the answer given to a correspondent in the last COTTAGE GARDENER, where you say, that *the most "perfect form of Cochin-Chinas is as free from legginess as the Dorkings."* Nor do I regard it as profitable to keep them beyond a certain age, as for general purposes I find them quite large enough from 14 to 18 weeks old; probably they are then killed at the greatest profit of any age. Thus we may fairly compare them with the improved Short-horns in cattle; for assuredly, from no other race of fowls could a like weight be looked for in an equal period of time. And here I must repeat my opinion, founded on very many actual experiments, that the quality of their flesh is not to be found fault with, provided the breed be originally well selected, subsequently well fed, and finally well dressed. In saying this, I do not assert their equality with Polish (the very *ne plus ultra* of deceased chickens), or such special Dorkings as Mr. Baily's shop can often supply.

Now, the Spanish, from their dark skin and twisted breast-bone, certainly do not look well on the table, and, as I think, fairly merit their assumed relationship to the *Corvidæ* alluded to by "Gallus." Thus, if my poor friends the Cochin-Chinas are, in Thomas's opinion, somewhat too closely allied to the *parrot* tribe, we must leave it to the decision of the public to decide, on the evidence of their own palates, to which of the two they will award the preference—remembering always, that weight for their money will often influence purchasers, even among those who can appreciate other merits, while it is for those who *supply* the market that we are now writing.

I still think that the food consumed by Cochin-Chinas is not beyond the proportion of their greater size; but, not having kept so careful a measurement of their allowances as would justify me in pronouncing positively on this head, I shall wait till the result of actual experiment will enable me to give an accurate account of their comparative consumption with other fowls.

But, after all, Cochin-Chinas and Spanish must fight it out on a fair field and without favour. All that I urge for the former has been said; but I again renew the caution, that it is very far from every Cochin-China—even imported birds—that is likely to be kept with profit; for this purpose, a broad, deep, short-legged race can alone answer. Now, if "Gallus" should wish to try such birds as I believe will answer this description, I shall be happy to exchange with him, and draw my own conclusions of the various merits of their really beautiful competitors, the *Spaniards*. With respect to the grey and speckled Dorkings, I shall as yet maintain discreet silence, for I am conscious of not possessing so full a knowledge of their merits as they doubtless deserve from the accounts repeatedly given of them by such highly competent judges. But I have said enough to show how highly I appreciate the practical information to be gained from correspondents of your paper, who, like "Gallus," write that others may learn, from such comparisons of individual experience, what is most likely to suit their own case. I must also thank him for the very courteous manner in which he has alluded to my observations on the comparative merits of the different breeds, and will assure him, that he is correct in believing that I am only anxious, by these remarks, to benefit that large class of persons to whom poultry-keeping may now offer the means of increasing the comforts of the cottage, or the profits of the farm.—W. W. WINGFIELD, *Gulval Vicarage, Penzance.*

YORKSHIRE AGRICULTURAL SOCIETY'S POULTRY SHOW.

IN imitation of the Royal Agricultural Society, the Agricultural Society of Yorkshire added to the other attractions of their Exhibition, at Sheffield, on the 4th and 5th of August, a show of poultry. At this time of the year it is not to be expected that the birds should look so blooming as in winter or early spring, and many are kept away altogether by the moulting season. Making allowances for all this, the Exhibition under notice, although not numerous, was creditable to the Society and to the exhibitors. We append the prize list, entire, which renders it unnecessary to go into much detail here. In the *Cochin* class there were several entries, Mr. Sturgeon again carrying off the first prizes. The *Dorkings* were the best class in the Exhibition, and the whole class was deservedly commended by the judges, the Hon. and Rev. S. M. Lawley, and T. T. Parker, Esq. dividing the prizes. The latter gentleman also obtained an extra first prize for his *Goslings*. The *Ducks* were a very good class, and the judges awarded two extra prizes to them. In some of the other classes good birds were exhibited, and we hope the Society will continue to make part of their Exhibition a feature so deservedly attractive as poultry, and one so rapidly rising in favour.

Best *Spanish* cock and two hens, £1, awarded to J. M. Thompson, Dewsbury; second ditto, 10s., to Robert J. Bentley, Eastwood-house, Rotherham. (5 entries.)

Best *Spanish* cock and one hen, 10s., awarded to Robert J. Bentley, Eastwood-house, Rotherham. (2 entries.)

Best *Dorking* cock and two hens, £1, awarded to S. W. Lawley, Escrick Rectory, York; second ditto, 10s., to T. T. Parker, Sutton Grange, St. Helens. (6 entries.)

Best *Dorking* cock and one hen, 10s., awarded to T. T. Parker, Sutton Grange, St. Helens. (4 entries.)

Best *Cochin-China* cock and two hens, £1, awarded to Thomas Sturgeon, Manor House; second ditto, 10s., to John Hill Smith, Skelton Grange, York, and Mrs. Hoggard, Clifton, York. (15 entries.)

Best *Cochin-China* cock and one hen, 10s., awarded to T. T. Parker, Sutton Grange, St. Helens. (4 entries.)

Best *Malay* cock and two hens, £1, awarded to Matthew Redgway, Dewsbury; second ditto, 10s., to James Dixon, West Brook Place, Halifax. (5 entries.)

Best *Malay* cock and one hen, 10s., awarded to James Dixon, West Brook Place, Halifax. (1 entry.)

Best *Game* cock and two hens, £1, awarded to Edward Frith, Turner Wood, Worksop; second ditto, 10s., to John Hall, Kiveton Park, Worksop. (6 entries.)

Best *Game* cock and one hen, 10s., awarded to John Hall, Kiveton Park, Worksop. (3 entries.)

Best *Golden Pheasant* cock and two hens, £1, awarded to Joseph Tuley, Matchless House, Keighley; second ditto, 10s., to G. E. Taylor, Oatlands, Leeds. (6 entries.)

Best *Golden Pheasant* cock and one hen, 10s., awarded to Thos. John Mould, Makeney House, Belper. (2 entries.)

Best *Silver Pheasant* cock and two hens, £1, awarded to Daniel Leeming, Little Blackwood House, Halifax; second ditto, 10s., to G. E. Taylor, Oatlands, Leeds. (10 entries.)

Best *Chitteprat* or *Corsican* cock and two hens, £1, awarded to G. E. Taylor, Oatlands, Leeds; second ditto, 10s., to ditto. (6 entries.)

[Mr. T. B. Stead, 1, Upper Albion-street, Leeds, exhibited some beautiful specimens of Polish, Cochin-China, and Black Spanish poultry, which arrived too late on the ground for adjudication.]

Best *Poland* fowl (any variety) cock and one hen, 10s., awarded to C. J. Mold, Makeney House, Belper. (2 entries.)

Best cock and two hens of *any other distinct breed*, £1, awarded to John Hall, Kiveton Park, Worksop; second ditto, 10s., to Fenton Bright, Bright, Crook's Wood, Sheffield. (7 entries.)

Best cock and one hen of *any other distinct breed*, 10s., awarded to R. J. Bentley, Eastwood, Rotherham. (1 entry.)

Best *Gold* or *Silver-laced Bantam* cock and two hens, 10s., awarded to

Charles Smith, Caistor, Lincoln. First prize not awarded for want of merit. (3 entries.)

Best cock and two hens, *black, white, or any other variety of Bantams*, £1, awarded to G. E. Taylor, Oatlands, Leeds; second ditto, 10s., to James Dixon, Westbrook-place, Bradford. (12 entries.)

Best *Gander and one Goose*, £1, awarded to T. T. Parker, Sutton Grange, St. Helens, and Fergus Ferguson, Walkington, Beverley; second ditto, 10s., to T. T. Parker, Sutton Grange, St. Helens. [Double first prize on account of extra merit.] (2 entries.)

Best drake and two *Ducks*, £1, awarded to Robert J. Bentley, Eastwood-house, Rotherham; second ditto, 10s., to Samuel Watkins, Worksop, Notts, and two second prizes to James Dixon, Bradford. [Treble second prize on account of extra merit.] (17 entries.)

Best *Turkey* cock and hen, £1, awarded to B. H. Brooksbank, Tickhill, Rotherham; second ditto, 10s., to ditto. (2 entries.)

PIGEONS.

Best pair of *Blue Carrier*, 5s., awarded to Godfrey Wentworth, Woolley Park. (1 entry.)

Best pair of *Yellow Horseman*, 5s., awarded to John Clark, Sowerby, Thirsk. (1 entry.)

Best pair of *Brown-speckled Jacobins*, 5s., awarded to Godfrey Wentworth, Woolley Park. (1 entry.)

Best pair of *Runts*, 5s., awarded to Robert Miller, Worksop. (1 entry.)

SPECIMENS OF PLANTS AND FLORISTS' FLOWERS.

ALL these must in future be directed to THE EDITOR OF THE COTTAGE GARDENER, *at Mr. H. Wooldridge's, Printer, Winchester.*

TO CORRESPONDENTS.

MANY QUESTIONS have to remain unanswered until next week, owing to the Editor's unavoidable absence.

COCHIN-CHINA COCKERELS (*E. A. & S.*).—We recommend you, and any one else who requires first-class pale buff-coloured Cochin-China cockerels, to apply to Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescot, Lancashire.

CARRIER PIGEONS (*Amateur Subscriber*).—The pigeons used in matches are the *Antwerp Carriers*, or, as they are more commonly called, "the Antwerps." They resemble the common *Tumbler* more than any other pigeon, but are of larger size. They have no wattle round the eye, and very little upon the beak, less than a *Cropper*. Their colours are various, as blues, &c., and the price varies from 3s. to 8s. per pair. They may be obtained from almost every dealer in pigeons, but we have obtained some from Mr. S. Mason, King's Cottage, Fulham, near London. If well fed, they do little injury to a garden.

OLD PROMISES (*E. S. J.*).—You are the only one, out of forty thousand, who has expressed a wish to have the promise of March the 25th fulfilled, therefore, the subject cannot be of much interest. Some of our promises are like straws, cast off to see how the wind blows. Your mode of punishment will be very agreeable if you come to inflict it.

LOBELIA CŒLESTIS (*Verax*).—It is only a hardy "herbaceous plant," not a bedding Lobelia. *Lobelia ramosa* is a half-hardy annual, to be sown only from February to the end of May. It is not suited for sowing in the autumn, and those who call it a hardy perennial do not read THE COTTAGE GARDENER.

VERBENA VENOSA (*Ibid*).—What we call the roots of this plant are only underground creeping shoots, having regular joints and buds, but no leaves. It is the same with the couch grass; a morsel of such roots will grow if a joint happens to form part of it. The tops will make cuttings, and grow as fast as any other Verbena, and now is a good time. "A bright violet-blue Verbena, brilliant, and of spready habit, not straggling," would be worth twenty guineas to any raiser. There is not a blue verbena yet worth planting for bedding.

VINE PRUNING (*Rhyd y Gors*).—We rejoice to find that THE COTTAGE GARDENER'S advice has set you right with your vines. Your young shoots, an inch-and-a-half round, *must* produce a crop, by all means; but pray be rather moderate the first year. We have no idea of the length and thickness of the main stems, or we could have advised you both fully and safely. If you will give such data, we shall feel a pleasure in completing the answer. One thing we advise—suffer your vines to ramble freely for some time yet, and you will have a border nearly filled with roots. Close stopping next year. You will see another article on pruning, &c., shortly.

GUERNSEY PRONG (*Rev. T. P.*).—We cannot find any maker who has this implement, described at page 250 of our 6th volume; but any blacksmith seeing the drawing, and reading the description, could make one.

GOLD FISH.—*T. M. W.* wishes to know the proper management and feeding of these. We have known them kept for years in a glass vase, with no other food than was afforded by fresh river water frequently changed, and a little growing moss kept at the bottom by a stone upon it.

CHINESE PIGS.—If *J. B. H.* writes to the Rev. W. Fox, Delamere Rectory, Chester, he may obtain what he requires.

GREENHOUSE (*J. S. L.*).—You must have some mode of keeping a freezing temperature away from your plants in severe weather. You may grow vines on ten-feet rafters. You will find abundance of hints, as to fitting up a greenhouse, in our back volumes.

PANNELL'S HEATING APPARATUS.—We find that the proper direction to the maker is Mr. J. Pannell, Renishaw Iron Works, Chesterfield, Derbyshire.

RABBITS (*Amicus*).—When a rabbit has the liver-complaint, we have always heard authorities say "the only cure is to kill it." If any of our readers know the cause, or a remedy for the disease, our correspondent would be obliged by its being communicated. What are the symptoms of liver-complaint in the rabbit?

TROTTER'S PAMPHLET (*A Constant Subscriber*).—See an advertisement inserted this day.

GREENHOUSE (*S. O. L.*).—With every wish to assist you, we cannot possibly do so without having a plan of your Elizabethan house, and a fuller statement of what kind of plants you prefer.

WHEAT (*S. R. U.*).—The *Golden Drop* variety is the best we know, and any large dealer in agricultural seeds could procure it for you.

RIBES SANGUINEUM, &c. (*Maddox*).—The leaves turn brown soon after the flowers go off, probably because the soil is too dry. *Calla*, or as it is now called, *Richardia æthiopica*, should be allowed to die down in the autumn, and the roots be kept dry. We cannot tell from your description what ailed your chicken.

CREAM (*H.*).—To obtain the greatest quantity in the shortest time, put the milk into very broad shallow pans, and keep it at a temperature of 75°. If you require a little book full of instruction upon dairying, buy *The Cow*, by Mr. Milburn, in the shilling series "Richardson's Rural Handbooks."

GLASS (*S.*).—Use Hartley's rough glass for the south side of the ridged roof of your greenhouse.

STABLE MANURE DRAINAGE (*Ibid*).—If you have an overplus of this in the winter, you may put it on to your flower-borders, especially where roses are grown. It is, however, most advantageously applied to plants when growing. In the winter, as it will only be adding a store of fertilizing matter to the soil ready for spring use, you had better apply it unmixed with water. Your other question next week.

HENS LAYING TWO EGGS IN A DAY.—Mr. F. W. Rust, of Stowmarket, Suffolk, says:—"I observed in THE COTTAGE GARDENER, in an extract from Mr. Trotter's Essay on the Rearing of Poultry, that he never knew a Cochin-China hen to lay two eggs in one day. I have a hen that has done this on two occasions; the first time on the 16th of April, within three hours, and the last time on the 12th of June, within the hour. This I can positively assert as a fact having come under my own observation, and that from the last two eggs I have now two chickens alive." We have the following from the Rev. W. W. Wingfield, bearing testimony to the same fact. He says:—"A remarkable instance of the merits of Cochin-Chinas as layers has just come before me. A young *Punchard* hen was brought home on the 24th of last December. She laid on the 25th, and continued to do so, till in 96 days 95 eggs were laid; 10 more eggs were then laid in 20 days, making, in all, 105 eggs in 116 days; she then sat and reared a brood. I have no doubt as to the correctness of this statement, having had a very well-kept poultry-book produced. Enquiries having also been made as to the fact of Cochin-Chinas laying more than one egg in the day, I can speak positively as to this having happened once in my own poultry-yard. A Cochin-China hen, and an American, which latter laid a totally different egg, were kept by themselves in one enclosure (locked-up); at 9 o'clock one morning I found their two eggs, none having been there the night before, and the Cochin-China had laid early the previous day; at 11, A.M., the same morning, the Cochin-China was on her nest, and on examination I found another perfect egg beneath her."

ALAMANDA NOT BLOOMING (*Philanthes*).—This must have plenty of heat, moisture, light, and anything to encourage vigour during summer, and then you will have no scarcity of flowers.

CRINUM AMABILE (*Ibid*).—"Will a strong plant bloom this season?" We can hardly tell without seeing it, and perhaps not then. Plenty of light, and a little shortness of water, might hasten the flowering; but, if after two or three weeks there are no signs of this, you must give water again, keeping it rather dry in winter, and the increase of temperature, light, and sunshine in May and June, will likely give you a fine display, or, if it does not bloom this season, it may bloom early in spring or summer.

CHILI ALSTRŒMERIAS (*Ibid*).—The tenderest of these may be kept over the winter, either plunged, or planted out rather deeply in a cold pit, in sandy peat soil, and protected from wet and severe frost by glass sashes, or any other moisture repellant.

BULBS IN POTS (*Ibid*).—*Ixias, Sprekelias, Gladioli*, and *Amaryllis*, now in pots, can be retained in the same mould and pots during the winter, and will bloom well next year, provided the drainage is right, and manure-water is given when growth is fully proceeding. They will often thus do well for several seasons. We prefer, however, to repot Ixias and Gladioli, when in a state of rest, and then the roots lay hold of the fresh soil. The Amaryllis tribe, generally, we prefer repotting after they have done blooming, and the leaves are growing freely; putting them into fresh soil, and placing the plants in a close, warm pit, shading and sprinkling for a few days to prevent evaporation. Then give them every advantage for growing until the leaves become of a yellowish tinge, and the plants will bloom splendidly in the same soil as the bulbs are rested in. For climbers in conservatory, see Mr. Fish's communication to-day.

RANUNCULUSES IN POTS (*Novice*).—The Turban Ranunculus' are sometimes grown in pots, but the roots deteriorate, and will not flower till the following season, and in the third year most of them would disappear entirely. This is the reason why they are not grown in pots. Perhaps there is no florists' flower so difficult, under the best management, to cultivate as the Ranunculus.

WINE MAKING.—*E. Y.* says—"Having made several different wines this season, and wishing to make some more by a receipt which you give in THE COTTAGE GARDENER, *vol.* vii., *page* 138, I find in that receipt you direct me where to start from, but you do not direct me when to stop." In answer to this, pray read this paragraph in the same pages of the volume you quote:—"The final gravity of the wine, before bottling, should be about 35, or, if intended as a dry wine, even as low as 20. In the former case (as the wine will be effervescent) it should be bottled in, or before, March, and in champagne bottles; in the latter case, two years in the cask will greatly improve and mellow the wine." Mr. Livett says, "I can give no more explicit directions than the above. As a general rule, this may be considered applicable to all wines."

STOCK OF BEDDING PLANTS (*T. B.*).—Your communication shall be inserted next week; pray send the continuation.

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WEEKLY CALENDAR.

M D	W D	SEPTEMBER 9—15, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
9	TH	Dog-Rose casts it leaf.	30.465 — 30.449	67—31	E.	—	27 a. 5	27 a. 6	morn.	25	2 54	253
10	F	Yew berries ripe.	30.497 — 30.457	70—33	S.E.	—	29	25	0 31	26	3 15	254
11	S	Beans cut.	30.481 — 30.381	68—36	S.E.	—	31	22	1 42	27	3 36	255
12	SUN	14 SUNDAY AFTER TRINITY.	30.401 — 30.287	74—38	N.W.	—	32	20	3 1	28	3 56	256
13	M	Elder berries ripe.	30.319 — 30.301	72—33	N.E.	—	34	18	sets.	●	4 17	257
14	TU	House Sparrows flock.	30.393 — 30.370	73—40	S.E.	—	35	16	6 a 59	1	4 38	258
15	W	EMBER WEEK.	30.540 — 30.491	66—38	E.	—	37	13	7 21	2	4 59	259

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 68.2° and 46.8° respectively. The greatest heat, 84°, occurred on the 12th in 1841; and the lowest cold, 31°, on the 12th in 1848. During the period 98 days were fine, and on 77 rain fell.

EAST INDIAN KLUGIA.

(*Klugia Notoniana.—Botanical Magazine, t.* 4620.)

THE genus *Klugia* was named after a German physician, Dr. Klug, by Schlechtendahl, a German botanist, and at that time it was supposed to be exclusively Mexican. Since then, however, the species before us is said to have been discovered in the East Indies, and in Ceylon, whence it was sent to the Kew Gardens, by Mr. Thwaites, from the Botanic Garden at Paradenya, near Candy. It is a stove annual, with deep blue flowers, belonging to a section of Gesnerworts called *Cyrtandreæ*, the same section to which *Chirita*, *Streptocarpus*, and *Æschynanthus* are referred. In addition to the interest which will be created by the richness of the flowers, this plant is remarkable for the shape of its large, soft leaves, which are heart-shaped in the outline, but much contracted on one side at the base, as is seen by our woodcut. It is also a native of Malabar, and the Neilgherry-hills, in Hindostan, and has been by various botanists referred to two other genera—*Glossanthus* and *Wulfenia*. It belongs to the Didynamia Angiospermia, class and order of the Linnæan system.—B. J.

Culture and Propagation.—This new annual requires particular care to raise it from seeds, as they are as small as dust, and, therefore, very liable to be washed away by watering too freely, and if you bury them beyond the merest covering, the probability is that you will never see any more of them. The best plan to adopt with this, and with all other seeds that are very small, is to put a thin layer of very fine-sifted compost on the top, then to give a good watering, and before the surface gets dry to sow the seeds on the moist earth, then to sprinkle a little of the compost in a dry state over them, just as you would salt a sandwich, then to press them gently, and after that to put a piece of glass over the pot, and if it happens to be hot, dry weather, it is an excellent plan to put a little damp moss over the glass. This will keep the whole in a uniform moist state long enough for the seeds to come up without any more water. It will grow in peat, or in peat with a little leaf-mould and sand, but the drainage must be good.

D. BEATON.

CONTINUING, from page 286, our narrative of the early history of Poultry in this country, we come next to the period when *Gervase Markham* lived, the first really original writer on the subject, whose works were published in this country.* The following is extracted from the sixth edition, published in 1631, of his volume entitled *Cheap and good Husbandry for the well-ordering of all Beasts and Fowls.*

"Some small thing hath been written of this nature before, but so drawne from the opinions of old writers, as *Italians, French, Dutch,* and such like, that it hath no coherence or congruity with the practice and experience of *English* customes, both their rules and climes being so different from ours, that except we were to live in their countries, rules which are printed are uselesse, and to no purpose. To let passe the opinion of strangers, and come to our owne home-bred knowledge, which is so mix'd with all profitable experiments, that it needeth not the helpe of other nations so much as men would make us believe.

"You shall understand that the dung-hill cock (for the fighting-cocke deserveth a much larger and particular discourse) is a fowle of all other birds the most manliest, stately, and majesticall, very tame and familiar with the man, and naturally inclined to live and prosper in habitable houses: he is hot and strong in the act of generation, and will serve ten hens sufficiently, and some twelve and thirteen. He delighteth in open and liberall plaines, where he may lead forth his hens into greene pastures, and under hedges, where they may warme and bathe themselves in the sunne, for to be penn'd up in walled places, or in paved courts is most unnaturall unto them, neither will they prosper therein.

"*Of the choice and shape of the Cocke.*—Now of the choice and shape of the dung-hill cocke, hee would be of a large and well-sized body, long from the head to the rumpe, and thicke in the girth; his necke would be long, loose, and curiously bending it, and his body together, being streight, and high up erected, as the Falcon, and other birds of prey are; his combe, wattles, and throat would be large, great in compasse, jagged, and very scarlet-red; his eyes round and great, the colour answering the colour of his plume or male, as gray with gray, red with red, or yellow with yellow; his bill would be crooked, sharpe, and strongly set on to his

* A memoir of G. Markham is inserted at page 391 of our sixth volume.

head, the colour being sutable with the colour of the feathers on his head; his maine of neck-feathers would be very long, bright and shining, covering from his head to his shoulders; his legs streight, and of a strong beame, with large long spurres, sharpe, and a little bending, and the colour blacke, yellow, or blewish, his clawes short, strong, and well wrinckled; his taile long, and covering his body very closely; and for the generall colour of the dung-hill cocke, it would be red, for that is medicinall, and oft used in cullisses and restoratives. This cocke should be valiant within his owne walke, and if he be a little knavish, he is so much the better; he would be oft crowing, and busie in scratching the earth to find out wormes, and other food for his hens.

"*Of the Hen, her choice and shape.*—Now for the hen, if she be a good one, shee should not differ much from the nature of the cocke, but be valiant, vigilant, and laborious both for her selfe and her chickens. In shape, the biggest and largest are the best, every proportion answering these before described of the cocke, only instead of her combe, shee should have upon her crowne a high thicke tuft of feathers; to have many and strong claws is good, but to want hinder claws is better, for they oft break the eggs, and such hens sometimes prove unnaturall; it is not good to chuse a crowing hen, for they are neither good breeders, nor good laiers. If you chuse Hens to sit, chuse the elder, for they be constant, and will sit out their times, and if you will chuse hens to lay, chuse the youngest, for they are lusty and prone to the act of ingendring, but for neither purpose chuse a fat hen, for if you set her, she will forsake her nest, and if you keepe her to lay, she will lay her eggs without shells. Besides, a fat hen will waxe slothfull, and neither delight in the one nor in the other act of nature, such hens then are ever fitter for the dish than the hen-house.

"*Of Setting Hens.*—The best time to set hens, to have the best, largest, and most kindly chickens, is in *February*, in the increase of the moone, so that she may hatch or disclose her chickens in the increase of the next new moone, being in *March*, for one brood of *March* chickens is worth three broods of any other; you may set hens from *March* till *October*, and have good chickens, but not after by any meanes, for the winter is a great enemy to their breeding. A hen doth sit twenty-one daies just, and then hatcheth, but peahens, turkies, geese, ducks, and other water-fowle sit thirty; so that if you set your hen, as you may doe upon any of their eggs, you must set her upon them nine daies before you set her upon her owne. A hen will cover nineteene eggs well, and that is the most in true rule, she should cover, but upon what number soever you set her, let it be odde, for so the eggs will lie round, close, and in even proportion together. It is good when you lay your eggs first under your hens, to marke the upper side of them, and then to watch the hen, to see if she busie her selfe to turne them from the one side to the other, which if you finde she doth not, then when she riseth from her eggs, to feed or bathe her selfe, you must supply that office, and turne every egg your selfe, and esteeme your hen of so much the lesse reckoning for the use of breeding; be sure that the eggs which you lay under her, be new and sound, which you may know by their heavinesse, fulnesse, and cleerenesse, if you hold them up betwixt the sun and your eye-sight; you must by no meanes, at any time raise your hen from her nest, for that will make her utterly forsake it.

"*Choice of Eggs.*—Now, for helping a hen to hatch her eggs, or doing that which should be her office, it is unnecessary, and shall be much better to be forborne than any way used; or to make doubt of bringing forth, or to thinke the henne sitteth too long (as many foolish curious housewives doe) if you be sure you set her upon sound eggs, is frivolous, but if you set her upon unsound eggs, then blame yourselfe, both of the losse and injury done to the hen in her losse of labour. A hen will be a good sitter from the second yeere of her laying, to the fifth, but hardly any longer; you shall observe, ever when your hen riseth from her nest, to have meate and water ready for her, lest straying too farre to seeke her food, she let her eggs coole too much, which is very hurtfull. In her absence you shall stirre up the straw of her nest, and make it soft and handsome, and lay the eggs in order, as she left them: doe not in the election of your eggs choose those which are monstrous great, for they many times have two yolkes, and though some write, that such eggs will bring out two chickens, yet they are deceived, for if they bring forth two, they are commonly most abortive and monstrous. To perfume the neast with brimstone is good, but with rosemary is much better. To set hens in the winter time in stoves or ovens, is of no use with us in *England*, and though they may by that means bring forth, yet will the chickens be never good nor profitable, but like the planting of lemon and pomegranate-trees, the fruit will come a great deale short of the charges. When your hen at any time is absent from her neast, you must have great care, to see that the cocke come not to sit upon the eggs (as he will offer to doe), for he will endanger to breake them, and make her love her neast worse.

"*Of Chickens.*—As soone as your chickens be hatch'd, if any be weaker than other, you shall lap them in wooll, and let them have the aire of the fire, and it will strengthen them; to perfume them with a little rosemary, is very wholsome also; and thus you may in a sive keepe the first hatcht chickens, till the rest be disclosed (for chickens would have no meate for two daies), and some shells being harder than other, they will take so much distance of time in opening: yet unlesse the chickens be weake, or the hen rude, it is not amisse to let them alone under her, for shee will nourish them most kindly: after two daies is past, the first meate you give them should be very small oate-meale, some dry, and some steep'd in milke, or else fine wheat-bread crums, and after they have got strength, then curds, cheese-parings, white-bread crusts soak'd in milke or drinke; barley-meale or wheat-bread scalded, or any such like soft meate that is small, and will easily be divided. It is good to keepe chickes one fortnight in the house, and after to suffer them to goe abroad with the hen to worme, for that is very wholesome; to chop greene *chives* amongst your chickens meate will preserve them from the rie, and other diseases in the head; neither must you at any time let your chickens want water, for if they be forc'd to drink in puddles, it will breed the pip: also, to feed upon *tares*, *darnell*, or *cockle*, is very dangerous for young chickens."

FORSYTH MSS.

At page 329 we mentioned that our first notice of Mr. Paterson in these MSS. is one of his letters dated from the Cape of Good Hope, in 1781; but he had been residing at that settlement for several years previously. This appears from the fact that, in 1789, being then still a lieutenant, he published *A Narrative of four journeys into the country of the Hottentots and Caffraria in* 1777-78, *and* 79. He states that he visited these districts in company with Captain Gordon, who had previously travelled over part of the same country, and had a knowledge of the Hottentot language. This gentleman named one of the inlets on the coast *Paterson's Bay*, in commemoration of his companion. The volume is a plain narrative of facts, not only specially interesting just now on account of its description of the Caffres, but from containing information and drawings connected with its botany, which modern naturalists would do well to notice and acknowledge. Among the drawings, all of which are coloured, are *Amaryllis disticha* (now *Brunsvigia disticha*), the bulb of which is used by the natives for poisoning their arrows, and the leaves of which endanger the lives of the cattle which delight to feed upon them; *Aloe dichotoma*, or Quiver-tree, which cover the hills in the district of Small Nimqua; *Hermannia*; *Stapelia*; *Euphorbia*, "supposed to be the strongest vegetable poison in Africa;" "a new species of *Geranium*," with white, crimson-blotched petals, from the banks of Sand River; *Geranium spi-*

nosum, on those of the Orange River, having spines, leaves, and Mallow-like flowers growing from the unbranched stems.

The next letter we shall quote from is dated "Camp, near Coimbatore, 21st December, 1783."

LIEUT. W. PATERSON TO MR. FORSYTH.

THE day I received your letter we commenced the siege of a very strong fort called Bligotcherry, which was attempted by Colonel Humberston last year. We invested it on the 9th of November, and it surrendered to us on the 13th. The caption of that place was about £200 to me. After everything was again in marching order, we proceeded to Coimbatore, and took that fort on the 25th ult., and on the 27th the colonel received orders from the Board of Madras to cease hostilities, or by this time we should have been very near the capital of Seringapatam.

The Company are now treating with Tippo Saib, and I think it is very probable that matters will be made up, if it is not countermanded from Europe; and, upon this suggestion, I am settling my small matters in this country, to be in readiness to march home with my friend the colonel, who will go by land. I hope that I shall be able to muster about £150 or £200 per annum, which will make a shift on half-pay should the regiment be reduced. I am very sorry that the campaign has rendered it impossible for me to make any collection but drawings; in that I have succeeded very well indeed, and I flatter myself, if no accident happens, that they will astonish you when you see them. This, I hope, will plead an excuse for me; you may be assured that no line of life in the world will lead me off Natural History—it is, and ever will be, my favourite study, when it does not immediately interfere with my duty.

The hammer oyster you mention, I assure you is not to be found where you mention; but in the Gulf of Manaar the pearl oyster and large shark (?) are found, some of which I shall send home.

GOSSIP.

WE are glad to find *Cottagers' Poultry Shows* have begun. Mr. Trotter, of Healey Mill, Hexham, writes to us as follows:—

"Having been called in on Saturday, along with J. S. Challoner, Esq., to act as judges at a poultry show, held in the adjoining parish, I beg to give you some particulars connected with the show.

"It took place at Slaley, one of the bleakest situations in Northumberland, at which place, and on the same day, a flower and vegetable show was held. The most remarkable circumstance connected therewith, is that the productions exhibited are mostly from cottage gardeners, and are of such a quality, that they cope with those exhibited at the leading exhibitions by gentlemens' gardeners. The nature and value of the soil of the parish may be inferred from the fact, that the produce of wheat generally averages not more than from one to two quarters per acre, thus showing with what energy the cottagers must cultivate their gardens to enable them to compete successfully, at the leading shows, with those who labour in infinitely better situations. Would that a similar energy would display itself in the cultivation of the fields.

"Although the two Societies to which I have adverted are managed by separate committees, yet I hail such a combination, as it were, (their shows being held in adjoining buildings) as a happy omen. Is it not better for the cottager to have such ambitious pursuits as the cultivation of flowers and vegetables, and of poultry, in which to spend his spare hours, knowing as we do, 'that the devil always finds work for idle hands?'

"Judging by the success which has attended the flower show (this being its fourth year), and by the zeal with which some of the cottagers have commenced to keep pure breeds of fowls, I anticipate that the village of Slaley will have a poultry show of considerable local importance. Although in this year's show the number of birds was small, yet there were some very fine specimens of both Gold and Silver-pencilled Hamburghs. I exhibited a pen of Cochin-China chickens, and one of Spanish ditto, a pair of Dorkings, and a pair of Golden-spangled Polish, and some Aylesbury ducks, all of which were greatly admired.

"The attendance of visitors was large, and so augmented the funds of the Society, that, after meeting all demands, a large surplus remains."

We recently saw, at Clapham Rise, Mr. H. Groom's collection of the varieties of *Lilium lancifolum*, and a very nice groupe they were. Although there are several other varieties, yet if a purchaser secures specimens of *album* (white), *punctatum* (white, spotted with pale pink), and *speciosum* or *rubrum* (white, with very dark crimson spots softening off to pink), he will have all that he requires. It is now quite certain that *Lilium lancifolium* is hardy, for Mr. Groom has grown it for three years in the open ground, without protection even in winter. He grows it beneath a north wall, about five feet high, so that the plants are exposed to the sun only at its first rising and at its setting, but Mr. Groom thinks this Lily would bear a more sunny exposure. It reaches to the height of five feet in the open ground. It is sweet-scented, and so are all the varieties, so as to perfume a greenhouse when grown in it.

A practical man (T. Hill) has suggested a form of *nail for training trees to a wall*, of which No. 2 is a representation. It is not so liable to break in driving as is No. 1 (which, made of cast iron, may be had at some horticultural ironmongers in London), and has other advantages.

No. 1.

No. 2.

The suggester calls it "The Permanent Tie Nail," as it is intended to remain where driven, and the branches are to be tied to it; "which is to be greatly preferred to the nail and strip system, as drawing the nail makes bad work with a wall." This is true, but unless a broad string of some kind can be employed for tying, the constant friction caused by the wind "makes bad work" with the branches where the tie goes round them.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

ABERDEENSHIRE, Sept. 17. (*Sec.* G. Reid.)
ALLENDALE, Sept. 11th. (*Secs.*, G. Dickinson and G. J. French.)
BATH, Sept. 16th. (*Sec.* H. T. St. John Matule, Esq.)
BRIDGEWATER, Sept. 22. (*Secs.*, Mr. J. Leaker and Mr. J. Hayward.)
BRIGG, Sept. 15th. (*Sec.* Mr. D. Nainby, Jun.)
BURY ST. EDMUNDS, Sept. 10 (Abbey); Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
CALEDONIAN (Inverleith Row), Edinburgh, Dec. 2.
CHEPSTOW, Sept. 14. (*Sec.* J. F. Hartland.)

CLAPHAM, Sept. 11.
DUMFRIES and GALLOWAY, Sept. 9th. (*Sec.* Mr. W. G. Johnstone.)
FORFARSHIRE (EASTERN), Sept. 15 (Arbroath).
GLASGOW, Sept. 10.
HAMPSHIRE, Sept. 9 (Southampton), Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
HEXHAM, Sept. 15, 16.
HULL, Sept. 16.
KIRKCALDY (Fifeshire), Sept. 9.
LINCOLN, Sept. 14.
LONDON FLORICULTURAL (Exeter Hall, Strand), Sept. 14†, 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
MID CALDER (Parish school-room), Sept. 10.
NORTH LONDON, Nov. 23, Chrysanthemum.
NORTHAMPTON, Sept. 27, Dahlia.
OXFORDSHIRE (ROYAL), Sept. 23. (*Secs.*, C. Tawney and W. Undershell, Esqrs.)
PEEBLESHIRE, Sept. 14th. (*Sec.*, J. Stirling.)
SOUTH LONDON (ROYAL), Oct. 14†, Nov. 11†, Dec. 9†, 16.
SURREY AMATEUR (George Canning, Grove Lane, Camberwell), Sept. 15, Dahlia.
TURRIFF, Sept. 17.
WHITEHAVEN, Sept. 17, Dahlias.

POULTRY SHOWS.

BIRMINGHAM AND MIDLAND COUNTIES, 14th, 15th, 16th, and 17th December.
BRISTOL AGRICULTURAL, December 7th, 8th, and 9th. (*Sec.* James Marmont.)
CORNWALL (PENZANCE), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)
MANCHESTER AND LIVERPOOL, Sept. 23. (*Sec.* Mr. H. White, Warrington.)

† For seedlings only.

PRUNING VINES.

(*Continued from page* 210.)

THE SPUR SYSTEM: *Third Year.*—At the above page we carried out the second year's culture; we now proceed with the third. In the fourth, we shall have a complete vinery, and that, if the border be right, and the subsequent practice good, will last nearly a century.

The last remarks were up to the month of September, in the second year; and the last operation was a covering of manure to the border. The pruning of the vines will take place as soon as the leaves have fallen, for after they are no longer useful it cannot be done too soon; for vines, more especially young or luxuriant ones, are exceedingly liable to bleed if pruned in the spring, and bleeding—that is, running of the sap—is a heavy tax on the strength of the vine.

The character of the wood will now stand thus: a cane, or stem, reaching to the back of the house, or nearly so, the lower portion studded at regular distances with what the gardener terms *spurs*, every one of which will contain an accumulation of materials for the future development of the buds. It must here be explained to the uninformed, that every young vine-shoot possesses a host of buds, or the germs of buds, at its very base, as though in anticipation of the aims of the vine-dresser. Mr. Crawshay, to whom we believe the suggestion of the close-spur system belongs, used to term it "pruning to the spawn-eye," and he laid immense stress in fully carrying out this principle. Right, he doubtless was, in principle, but, somehow, the best spur-systems have their exceptions, as the Scotch poet said—

> "The best laid plans of men and mice aft gang aglee,
> An leave us nought but grief an pain for promis'd joy."

And just so with the vine; many a one, after establishing this practice, thought it necessary to depart a little from it. They, perhaps, have found that their neighbour carries the medals away at the exhibition who did not prune so close, or who had adopted the long-rod system. And, in very truth, there are cases in which vines will not bear well if pruned to the "spawn-eye;" but, we are assured, that in all such cases it is a defect of root-action, the border not being what it ought to be. All we can advise in such cases is, where spawn-eye pruning is not found to succeed, and it is not desirable to disturb the border, that the dresser give up the niceties of spawn-eye pruning, going a joint farther; and if that does not succeed, to break into the long-rod system, or some approach to it.

"A cane, or rod, is reaching nearly to the back of the house, the lower portion studded with spur-shoots." In pruning those side-spurs they must be cut back to one eye, or, at the most, two; if one eye, it will be Mr. Crawshay's "spawn-eye," and, as before observed, situated close to the base of the spur-shoot. Now, in pruning these back, a selection will have to be made, if most of the side-shoots have been retained as spurs, for they will be too close together. A first-rate and careful cultivator, however, would have displaced all but the necessary ones at their first budding in the previous summer,—a practice we scarcely dare recommend to the uninitiated, for fear they encounter accidents with the remainder, which might cause a length of main stem to be destitute of spurs. This brings us to the distance most desirable for the situation of the selected spurs, and we should say, that one to a foot all up the rafter would be amply sufficient; indeed, to obtain grapes fit for the first exhibition tables, three inches more might be allowed. If the spurs are allowed to remain closer, the consequence will be. that the advanced foliage of one will overtake and much shade the other, thus compelling the vine-dresser to be too severe at times in his pruning and stopping processes. These spurs should, as far as possible, be selected on opposite sides of the shoot alternately, not only for the sake of symmetry, but also as facilitating the equal admission of light; but this is not indispensable.

Next: what is to be done with the leader, or upper portion, which has not yet developed its side-spurs? The character of this must be examined, in order to ascertain the condition of the buds on its sides. It not unfrequently happens with gross young vines, that on one part of the upper portion the eyes will be at very irregular distances, and the wood in their vicinity distorted, and looking somewhat immature, as compared with the lower portion. This is a mere consequence of a too great rapidity of growth at a certain period for the amount of light; it is an extravagance of nature, and it is sometimes necessary to prune some of this away. However, as it is most desirable to furnish the whole rafter this summer, such must be pruned with some caution; and if no great irregularities appear, the cane may be shortened to within a foot or so of the top of the rafter. Of course, all laterals on the sides, which have been merely pinched back, must be pruned close to the main stem.

We have now a clean rod, or main stem, nearly the length of the rafter, studded about half its length with little knotty spurs, each of which will, in its day, it is to be presumed, yield many pounds weight of good grapes; the other half, a clear, stout, short-jointed rod, ready, with the returning spring, to do in like manner. Presuming the roots to be in a border outside, we advised, at page 211, the application of a manurial covering to the border of a foot in depth; this should be dung fresh from the stable-door. Such will impart much fertility to the border, and will serve, as previously stated, to work up, in order to produce a bottom warmth in the ensuing January or February—a proceeding, when rightly conducted, of immense benefit to vines.

The next thing in order, is to dress the wood of the vines, and to thoroughly cleanse the house; effect

necessary repairs, painting, and lime-washing. The white-washing must be done every year, using plenty of sulphur with the lime. It will be seen, that in following out the natural order of the subject, we have assumed the house to be only a vinery; this we have done in order to guide our readers into a study of the essential principles connected with vine-culture; when, however, as will be very often the case, the vinery is the plant-house, compromises of one kind or other will frequently take place, of necessity, and then he who keeps his eye best fixed on the essentials of vine-culture may best hope to succeed.

To deal with the several compromises which arise in many cases, in a brief paper like this, would be to mar the whole subject; our object is to leave a distinct and perspicuous impress on the mind of the uninformed reader. Having, therefore, reached the month of November, and the vines having been pruned, and the border covered, we would, if the house was empty, stove it well with sulphur. Next, let the stems of the vines be thickly coated with the sulphur paint, so often advised in these columns. This, according to our practice, is thus compounded:—Clay is beat in water until it becomes a thick paint; sulphur, at the rate of one quart to a gallon of the mixture, is added, and to this we add half-a-gallon of soap-water, made by whisking up soft-soap at the rate of four ounces to a gallon; the whole well-stirred during use, and if not thick enough, more clay added. Some add a good deal of quick-lime, and perhaps it is good practice; we, however, have most faith in the soap and sulphur. It is well to give a good dressing, especially to old vines; and in this case, a little time is good as a tell-tale in the first dressing; the operator can at once see if any portion had been missed.

Henceforth, nothing is needed but to get the vines to rest, and many persons so contrive the front sashes of their houses as to admit of the vines being turned completely out-doors for awhile. We do not advise this; we do not condemn it; much depends on circumstances. If the interior of the house is appropriated to plant culture, and a temperature is required of some 40° to 50°, or more, why all we say is, turn the vines out if you can. There is, however, no mystery in turning out, beyond a low temperature. Perhaps an average of 45° would be amply sufficient as a rest; we have known them succeed well in one somewhat higher. Frost is by no means essential, although, perhaps, half-a-dozen degrees would be beneficial rather than otherwise. If we could choose, we would have the autumn temperature decline in a most gradual way, until it reached from 30° to 35°; and after remaining thus for three weeks, or so, to advance as gradually through the spring.

The readers of THE COTTAGE GARDENER, however, are already favoured by a temperate climate, the envy of those who are half-baked in torrid climes; and to ask for greater natural advantages would be vain. We well remember, in early days, reading such a tale as this in a juvenile book. A certain countryman, knowing the solicitude of the Pope of Rome for the welfare of his dependancies, and having experienced many bad harvests in succession, resolved to petition the holy father for two harvests a-year. The Pope, ever loth to deny them a boon, at once granted their request, and something more. He passed an edict, granting, in addition, twenty-four months to their year; thus conferring a double favour. R. ERRINGTON.

BUDDING AND GRAFTING RHODODENDRONS.

WHEN writing about the Rhododendrons the other day, I had no space left to say that September is also the best time to bud them, and that all the race will come from budding and grafting, as well as roses or apples, and not only so, but that it is desirable to bud and graft many of the new species or varieties that have been recently introduced, because our soil and climate might not suit them so well on their own roots.

Maximum is the best stock to bud all the strong hybrid Rhododendrons on, such as have the breed of *Arboreum* in them—and the *Rhododendron ponticum*, or any of its varieties, are the best stock for such as are of a dwarf nature. A full-grown plant of either of these may now be budded all over the young wood, so as in three years to be changed entirely into another kind or kinds, and there is no more art required for effecting such a change than is needed to make a standard rose out of a wild briar from a hedge-row. The leaf may be cut away, and the bud inserted just like a rose-bud, and the whole may be left untouched till next April or May, when the young shoot above the inserted bud must be stopped. If the top or leading bud is broken off, it will be enough at first, but if any of the natural buds above the inserted one should start before it, they also must be rubbed off, and when the inserted bud grows out a few inches, the top part above it may be cut away altogether, down to the very back of the young shoot, or else a small portion of the shoot and a leaf or two may be left for another month or so, and the young shoot may be tied down to this left portion, at the option of the owner. The latter is the easiest way, as it saves the trouble of tying in sticks to support the new shoot until the union is firm enough to support itself. In this way all the fresh growth of the old Rhododendron for next year would be confined to the new buds, but all the old leaves below them should be left untouched, but such side-shoots, or weak, straggling shoots as were not budded on, should be cut out before they opened out next May or June.

Thus, even in a couple of years, an old Rhododendron might be entirely changed, and the same might be done by any of the common modes of *grafting*, only that grafting is better for pot plants that ought to be under close cover while the grafts were "taking." Indeed, I am not certain that grafting evergreens in the open air is easily effected; at least I never tried the plan with Rhododendrons, but the budding I have done over and over again, with no more failures that you meet with in roses. We have no records of experiments having been tried to cut off the leaves of grafts of evergreens and then graft the pieces in the open air; but I see no reason against the practice. We know that there is no difference between the union that takes place between a bud and the stock in which it is inserted, and that between a stock and a graft; the matter which forms the union is provided by the stock in both cases, and if we can cut off the leaf from a bud, and succeed in getting it to grow on a wild stock, what is to hinder the same union between a short piece of disleaved evergreen and any stock that is natural to it? We have seen, very lately, how some good-natured people disagreed about the influence of a newly-inserted bud; one of the party was for cutting off the top part of a shoot the moment a bud was put in lower down, to throw the whole force of the sap into this new bud at once, just as if this bud could act like a patent stop-cock, into which the sap would run the moment the handle was turned. If this were so, the leaf ought to have been left to the newly-inserted bud, as they all say a leaf helps to draw the sap to itself, and that is true to the letter. On the same footing, three or four leaves left on the graft of a Rhododendron ought to be a wonderful help for uniting it to the stock; but a bud inserted, or a graft put on, have no sort of independent action of their own for many days after the operation is performed. They only live by sufferance; the juice of the stock keeps a bud or a graft moist and from shrivelling for a certain time. A ball of wet moss, or a damp floor, would do exactly the same thing, and probably for a

longer period. In the same way an Alder shoot, or the top of a Currant bush, will keep a rose-bud alive for ten days, but all this is only mere protection, and there can be no union without a natural relationship in the parts.

It is quite true, however, that you may cut down a young Rose shoot to half its length, and bud the bottom half, and that the bud will grow, nevertheless. I did so myself last July, and the buds succeeded; but that only showed what an easy and very simple thing it is to get roses to "take." I have seen every bud put into a long row of rose-stocks fail by this same way of cutting the shoots. The state of the weather made all the difference; and there are scores of plants whose buds would instantly perish if the shoots on which they were worked were stopped at the same time. Therefore, although I cannot say so from experience, perhaps a Rhododendron bud would equally suffer under similar circumstances, and it is as well not to try the experiment with any valuable kinds; but if one had only a really good Rhododendron to get buds from, it is well worth while to try the experiment of changing the whole aspect of common bush Rhododendrons by this means. This is, at the same time, the most easy and the most useful experiment that a lady can try, and the ends and odd bits from her worsted work will make the best tying in the world for the buds. Rose-budding is really a dangerous work for most ladies, but a child could bud Rhododendrons if he knew how. There are neither prickles nor green-fly on them to tear or soil the fingers.

The next question, after having the power of transforming a common Pontic Rhododendron to a *coccineum* or *grandiflorum* bush without diminishing its size, is—If it be possible for ordinary mortals to make fine standards of them, like the Bagshot people? To be sure; if one happened to have a standard Rhododendron of any sort, it would be just as easy to change it to another kind as a bush plant, without losing a day's growth, by either budding or grafting other kinds, or one good kind on all the leaders. This I have seen done this very season by Mr. Jackson, of Kingston, in one of his hothouses, and, in time, I make no doubt but he will make standards of the Sikkim ones in the same way, for I see he has got an immense lot of seedlings of them in cold pits, and *I think* he told me that *Ciliatum* could be sold now for 3s. 6d. If so, you might have four corner plants of it in bloom on the breakfast-table next Christmas-day, growing in common tumblers or finger-glasses, for the flower-buds are quite prominent now, and the plants not more than six inches high. I have said already that *R. ciliatum* belongs to the Azalea section of the Rhododendrons, and that the flowers are of the size and shape of those of *Azalea variegata*, from China, and also that it has sported into two or three shades from wild seeds sent home by Dr. Hooker, leaving no doubt on one's mind of this plant making the best mother we have for a new race of dwarf alpines, as well as for correcting some of our garden seedlings of Chinese Azaleas into florists' flowers, and for the latter purpose, we have none equal to the old *Variegata* for the pollen side. Last spring, some of us thought that some magic or scientific process was put in force to get *Rhododendron ciliatum* to flower so early from seeds, and on such small plants, but the habit seems natural and fixed. I should think it as well fitted for a Wardian case as any of the Lycopods themselves.

There are two ways open for those who would indulge in the fancy of making *Standard Rhododendrons* for themselves, one of which I urged in The Cottage Gardener some time since, and the other is quite new. There is no more difficulty in converting a strong, healthy bush Rhododendron into a tall standard than there is in forming an imitation orange-tree out of a common or a Portugal Laurel. Just as either of these evergreens are on the point of making their first growth at the end of the spring, let them be cut down close to the ground, or somewhat lower than the general level of the ground, and forthwith there will spring up a host of rival shoots from the collar, the strongest of which is encouraged by stopping the rest as soon as they form a good tuft of leaves. This is better, at first, than pulling off all but the one shoot which is to form the standard, as the extra number of leaves will keep the roots in active play until such time as the principal one is of sufficient strength and capacity to require all that the roots may collect, and then it is not so well to pull up all the stopped shoots at one time, as to make three or four thinnings in succession, at so many weeks' intervals; because it is now a well-established fact, that a large sacrifice of leaves, or shoots, at one time, puts a sudden check on the action of the roots; whereas, a gradual taking of them off only lessens the power of the roots. Thus, Mr. Errington would think me daft if he saw me cutting off all the breast-wood on a strong pear-tree, at one pruning, early in the summer. The standard shoot of this Rhododendron bush would probably make three growths, if not four, the first season; and if the last growth appeared to be very soft and unripe late in the autumn—and I have seen cases of the kind—it would be desirable to tie it to a stake, and to wrap the soft top in a handful of dry fern, or something of that sort, it being most essential to preserve the leading bud until the stem is standard high, otherwise a side bud, taking the place of the leading bud, would make the stem bow-legged, as they say in Scotland. As soon as the leading bud reached the height required, and this would be some time during the second summer after cutting down, it should be broken off; then there would be no more wound than just the size of the bottom of this bud, and that would heal over in a few weeks, leaving a stem as straight and clear as if it were cast from a mould. The next tier or two of buds below the leader would then start, and from them the spokes are to be selected which are to sustain the future head; therefore, see that a selection is made so that these spokes, or main leaders, are not too close together, and if you get five of them, the rest you may stop, and keep stopped all that season, on the same principle as if so many of the root-shoots were kept for awhile. Some stakes, or framework, should now be used, to train the fine shoots into a regular form, lowering the strongest of them, so that the whole may come of equal strength; and when they are a foot or eighteen inches from the main stem, take out their leading bud also; each of them will branch out in turn, and very likely some of this second growth must be thinned-out, and so on, until the head is as big as the stem can carry.

D. Beaton.

ERYTHRINAS AND CALCEOLARIAS.

Erythrina Crista-galli.—Some time ago, I alluded to the culture of this plant for the ornamenting of the greenhouse and conservatory, for which purpose few things make a more splendid appearance. Hints were also given for its management out-of-doors. A fortnight ago, mention was made of a splendid bed in the same garden where standards of the *Salvia splendens* were flourishing. A few days after that note was written, a party of ladies and gentlemen asked me many questions about this Coral plant. Did I grow it? They would like to see it. Did it want much care to prepare it for planting out? Should it have heat previously? Would it not stand out all the winter with a little protection? Had I seen the bed at Pensanger, Earl of Cowpers, near Welwyn? the identical bed to which I have alluded, and which certainly furnished me with dreaming matter for several nights. A few days afterwards, another party, whatever they noticed or approved, seemed always to

end in this Coral plant as a grand climax, so that without being envious of Mr. Dawson's success, I certainly could not help wishing that I could have shown them a respectable bed. The plants I had turned out were young and too forward; the first bloom was nearly gone, and the second shoots, unless in a fine autumn, will do little good, and I fear tend to exhaust the roots for a succeeding year. I am none the less in a position, however, to tell our friends how they may obtain gorgeous beds of this plant.

I have never seen the plant so used to any great extent. In this neighbourhood, I am not aware of its being so employed, except by Mr. Dawson, at Pensanger, and Mr. Snow, at Earl de Grey's, Wrest Park. The method of growing it in the beds by these two gentlemen is different. Mr. Snow uses it in a symmetrical garden, where the plants are all low, and, therefore, the *Erythrinas* are pegged down, and you thus require to be near the bed to see the massive beauty of the flowers. Mr. Dawson allows the shoots to grow upright. As far as I recollect, they were rather more than a yard in height, thin enough to allow room and air to each shoot, and each of them clothed from the point to near the base with flowers; the bed thus being very attractive at a distance. The mode of treating the plants previously to planting-out is in both cases identical, and harmonises with our own successful practice with single plants. This treatment will be the best answer to many enquiries.

As soon as the plants have done flowering, and the leaves withered, the shoots are cut down pretty close to their base; and before frost of any intensity comes the plants are carefully lifted, and potted in any light, rich soil. If the shoots are not well ripened before cold weather comes, it is best to pot without cutting down, supplying the potted plants with a little water, and plenty of air under cover, until the base of the stems, at least, is pretty hard and firm. If there are large plants in pots, they may remain in them after cutting the stems down. Two things are now essential to success:—

1st. The plants must be kept cool, free from frost, and dry, rather than wet, though not quite dry during the winter.

2nd. In spring the same conditions must be secured. Vegetation must be retarded instead of being accelerated. A dry, airy, cool position, but free from frost, is the place for them. The less the shoots are sprung, provided they are shooting freely before being planted out in May, the better. Three inches in length will be better than nine, and more than the latter will unfit the plants for a fine effect in moderately dwarf beds. The keeping the plants back enough before planting-out time is the *great point* with both of these first-rate cultivators. A slight protection may then be necessary, but the little check to growth given at planting seems sufficient to cause the flower-buds immediately to form; so that the flowers reach within a few inches of the base of the shoots, instead of appearing as spikes at the extreme points. I have long found that for dwarf, massive plants in pots, a similar cool and quiet treatment must be given them: allowing the plants to grow in winter, or giving them extra heat to get them of good size in spring, will be fatal to fine, robust, dwarf beds.

If success be proof of right, then the above must be the best mode. They could not be kept dry enough, and free from frost, without great trouble, in the beds out-of-doors, and even then the shoots would not break so regularly, and many would be gross in their habits. When we used to make beds of *Fuchsias*, I found it necessary to transplant every spring, to ensure equality and compactness of growth. Before, or shortly after planting-out, is the best time for thinning and regulating the shoots, and these thinnings make the best cuttings for increasing and forming a stock; but all these matters were previously alluded to. Mr. Dawson finds the *E. laurifolia* as useful as the *crista-galli*.

YELLOW CALCEOLARIAS.—Which is the best for vase, basket, and bed? are questions often asked. "What yellow Calceolaria is that?" is another as frequently put; and the answer with me uniformly is—*Caies yellow*. This does best with me in-doors and out-of-doors, and, though growing others, I make this my chief. I have had many sent me that were to beat it, but it remains my favourite still. Two years ago, I spoke of it as highly as I do now; and a clever gardener, then in Staffordshire, wrote me, "that I did not know the good things that were out," and offering to send me some old plants of a yellow, after seeing which, I never would grow *Caies* any more. Of course, I took him at his word, and from the old plants I managed to get a few very small cuttings, which received every, nay, much extra, attention. I found, however, that this wonderful Staffordshire yellow was only a second edition of *Aurantia multiflora;* a good thing, certainly, but not equal with me to *Caies* for compactness of growth and denseness, and continuance of bloom.

What is the best Time and Mode of Propagating Shrubby Calceolarias?—Their propagation is most easily managed in spring, in a slight hotbed. In the autumn they always do best after the middle of September, and kept cool. A frame, or a hand-light on a north border, is just the place. They will root best when the cool nights come. Small side-shoots, from one to one-and-a-half inch in length, make the best cuttings. Those who follow this *easy* mode will have no reason to envy those who put in lanky cuttings a month or six weeks ago. Let the soil in which they are placed be very light and free from worms.

CALCEOLARIA AMPLEXICAULIS.—This, whichever way used, has done as well with me this season as my old favourite, the *Kentish Hero*, has done ill. The narrow, lanceolate form of its leaves, and extreme closeness of the opening of the slipper flowers, enabled it to stand both heat, and rains, and hail, with comparative impunity. Its soft lemon colour is no bad accompaniment of the deep orange of *Aurantia*, *Caies yellow*, *Kaziana*, or *Viscossissima*. It may, and should, be treated differently from most others in the following respects, whether used in-doors or out, for basket or bed:—1st. Whether propagated in autumn or spring the young shoots should rarely be *stopped*. If they are, the bloom will be too late to compete with the first brilliancy of other Calceolarias; if unstopped, they will bloom as others. 2nd. To keep up a succession of fine bloom, thinning the young shoots must be resorted to after the first flower-stalks open their blooms. Unlike most others, a profusion of young shoots come from the main one that bears the first flowers. If these are all allowed to remain, the competition for precedence is such, that you will have a very indifferent bloom late in the autumn. By removing by degrees the greater part of these young shoots additional strength is thrown into those remaining, and these will then produce flower-stalks almost equal to the first. The plants may thus be maintained in beauty until the cold is too much for them. 3rd. From the above mode of growth, cuttings may always be obtained freely from these side-shoots after growth has been freely proceeding, and thus taken, they will strike at any time. A mass of this plant, with a purple border, has a pleasing effect.

CALCEOLARIA SULTAN.—This is a large dark variety, but with a large opening in the flower. In general, I prefer small flowers, when exposed to wind and weather. From the large opening I was prejudiced against *Sultan*, though otherwise fully convinced of its beauty. In several exposed circumstances it has stood well with me this season—in fact, quite as well as flowers not a

third of the size. I would, therefore, advise what I intend doing—increasing it, and trying its effect in a largish mass, in the neighbourhood of something else of a bright, cheerful-looking character. Then, in-doors or out, if it maintains its present reputation, it will not cause disappointment. R. FISH.

THE HOLLYHOCK.

(*Continued from page* 358.)

HAVING dwelt largely upon the hybridizing, raising seedlings, and managing this flower till it blooms, we now return to *management of established varieties.* The first points in that management are soil and situation.

The soil that the Hollyhock delights in may be described as a firm, yet friable loam, such as we find in old pastures near the sides of a river, "far from dust and smoke." This is often termed *virgin soil,* because it has never been mixed nor used before for gardening purposes. Now, any one that can obtain such a soil for his Hollyhocks may think himself a favoured individual; but if it cannot be had in such a pure state, let him procure some as nearly like it as possible. Then not only have good soil, but have plenty of it, for the bed should be at least three feet wide, with eighteen inches of this good earth in it. For the first year it will be rich enough without any manure, excepting a thin covering on the surface during the winter. If too rich, the colours may run, but in loam alone, the colours will be bright and clear, and yet the growth will be sufficiently strong to bring out the flowers to their full size. The ground, if low, should be well and thoroughly drained, the Hollyhock being very impatient of moisture at the roots during winter. The situation where Hollyhocks should be planted ought to be an open one, where plenty of air can blow around them, and no drip from neighbouring trees fall upon them. The best season for planting the general collection, if the plants are strong, is about the end of September. By planting them thus early, they will begin to push forth new roots, and even leaves, before the severe weather takes place. If the plants should be weak from any cause, such as being struck late, &c., then it will be better to keep them in pots in a cold frame through the winter, and plant them out early in March. Previously to planting, let us consider what will be the best mode of doing it, so as to show them off to the best advantage when in bloom.

Planting.—We have said above that the *bed* should be three feet wide. This implies that the plants should be planted in beds, with walks on each side. In this bed, then, let them be planted directly, in a row, and exactly in the centre. As each plant should be effective, care should be taken that each plant is alike healthy and strong. Plant them at a foot-and-a-half apart; a foot would be too thick, and two feet two thin. Take the medium, and the row will be full enough almost to form an impenetrable blind, especially if the side-shoots are trained in likewise. The best implements to plant with are a small spade and a pair of willing hands. Stretch a line down the bed, at such a distance from the side that the plants will be in the centre; then dig a hole out sufficiently wide and deep to hold all the roots without cramping them. If the plants are in pots, turn the first out, break the ball gently, and spread the roots out every way, working the soil amongst them with the hands, gradually filling up the hole until the soil is quite level; press it down gently during the operation, and leave it a little the highest round the neck of the plant; this finishes the first plant. Before planting the next, it will be wise to consider the kind that should come as its neighbour; the principal consideration for regulating this being colour. It is certainly desirable to have a variety in each row, especially in an amateur's garden. A florist, or a nurseryman, may be desirous to plant all one kind together, and this is quite right in his case, because, by so doing, he prevents, in a great measure, mistakes in supplying the orders of his customers; but an amateur will not consider this so much, but will be desirous to have a mixture of colours, and this we shall leave to his own taste and discretion, only advising him to avoid violent contrasts. Having fixed upon the colour, proceed to plant the next, and so on, until the bed is filled, taking care, as the work goes on, that the right name or number is firmly affixed to each, so that no mistake may probably be made. Indeed, as a further precaution, it will be advisable to keep a list of the names in a book, just as they stand in the row, so that if the label is lost, the name in the book will declare what the name of the variety is.

T. APPLEBY.

(*To be continued.*)

CONIFERÆ.

(*Continued from page* 336.)

CEDRUS LIBANI (Cedar of Lebanon).—This magnificent, well-known tree, is found, as its name imports, on Mount Lebanon, in Syria, from whence Solomon fetched its timber to build the temple at Jerusalem. In this country it has become almost naturalized, but is not planted, even yet, as a matter of economy or profit, which is much to be marvelled at, especially as there are plenty of trees so mature in age as to produce cones filled with ripe seeds annually in our cold climate. Such being the fact, is it not surprising that the fine specimens in the country are chiefly found near to the mansions of the gentry only, instead of being planted out largely, as a matter of profit, like the oak or the larch? It is true, the plants, when young, are somewhat costly to plant on a large scale; but the reason of this is because sufficient encouragement has not been given to nurserymen to raise large quantities for that purpose.

This fine tree will grow in almost any soil or situation, but thrives best on a moderate elevation, in tolerably deep, good loam, with a dry subsoil. When it is desired to see it in all the majesty of its character, it should be planted singly, at a distance of not less than forty or fifty feet from any other tree. Very recently, we saw an example of planting the Cedar of Lebanon which is worthy of notice and imitation. F. Wright, Esq., has spent at least twenty years in building and planting, at Osmaston, near Ashbourn, in Derbyshire. He has built a church, a village, and a mansion for himself and his descendents to reside in. On each side of the carriage drive (which is nearly two miles long) from the high road to the house, there are numerous groups and single trees of the Cedar of Lebanon, planted at proper distances from each other, and securely protected by strong iron hurdles from being browsed upon by the cattle. They are judiciously planted in such an irregular manner as never to form anything like the appearance of an avenue. They are now young, flourishing trees, and will, in after generations, be truly fine objects, and mementos of the taste and spirit of the present proprietor.

The Cedar of Lebanon produces most excellent timber, which, when fully grown, is almost imperishable. We are not aware that the seeds are eatable, and should suspect not, from the large quantity of resin they contain. The spray and branches not useful as timber make excellent firewood.

In our nurseries there are several varieties of this remarkable tree, some more and some less distinct. As curiosities, they are worth searching for and growing. They are named—*C. L. foliis argenteis,* or silver-leaved; *C. L. nana,* the dwarf, a curious little thing; *C. L.*

glauca, the milky-green leaved; *C. L. intermedia*, the intermediate cedar; *C. L. pendula*, the weeping Cedar, which is a very pretty variety; and *C. L. pyramidalis argenteis*, the upright silver-leaved Cedar.

Cedrus elegans of the Horticultural Society, and *Cedrus Africana* of Gordon (The Mount Atlas Cedar).—We have already noticed this, but will add, that whether this is more than a variety of the Cedar of Lebanon seems at present to be not quite decided. It is certain that it resembles that species in its general appearance, and, perhaps, habit of growth; but it certainly has a remarkable character in the whiteness of its foliage. From the young plants that we have seen, we judge it will be found a more upright-growing tree, and with a tendency to form a more dense appearance, the branches appearing to be set much more close upon the main stem. It requires the same soil and situation as its relative. Travellers in Africa say that the timber is heavy, and capable of the finest polish, almost equal to mahogany. We have every reason to believe it to be perfectly hardy. Some plants of it, in various places that we have visited, appear to bear the severity of the winter with no protection whatever. The great point seems to be to have the soil well drained, and the plants set upon a raised mound of good friable loam, mixed with the chippings of stones. In this they will thrive well, the only attention necessary being to add to the mound as the roots advance, and to be sure and protect the young plants from being eaten by hares and rabbits. If the entire piece of ground is not protected, the best article for single plants, that we have seen, is some wire trellis, about half-a-yard or two feet high. Some strong iron rods, thrust in about four feet from the plant, in a circle, and standing upright a little higher than the wire trellis, serve as stakes to fasten the trellis to. This is an effectual protection, and lasts for several years.

T. Appleby.

(*To be continued.*)

MAKING MUSHROOM-SPAWN AND BEDS.

September being usually a dry month, with a steady, settled atmosphere, more congenial, we believe, to the production of fungi than any other month, we generally avail ourselves of it to prepare our mushroom-spawn, as well as to provide the materials of which we make our beds; but the former requiring some little time to prepare, and the season for that work spending fast, we make no apology for at once detailing the process.

It is well-known to all who have had anything to do with hotbeds, that mushrooms often present themselves in large clusters along the sides or top of the bed long after all heat has subsided: that the spawn of the plant had, by some means, found its way thither, is evident to every one, and it only waited a fitting time to show itself to the world. Now, we have seen as good a crop of mushrooms in a frame upon an old hotbed as we ever saw on any prepared bed: and why not so? The bed is formed of the substances most congenial to the mushroom, and if no contrary influences exist, and the spawn be allowed to develop itself, mushrooms may as well be produced in such a bed as in one expressly prepared for them; with this object in view, we generally scatter a little spawn on the top of every hotbed we make, and after it has performed its allotted duty as a hotbed, and, probably, forms a place on which to store half-hardy plants, it is then that mushrooms show themselves, called into action by the moisture the bed receives in the overplus water given to the plants. This is not unusual; and we have seen clusters of mushrooms rise up underneath a pot of no meagre dimensions, and overturn it. So much for the natural power of growth of this delicate production; but it is not a solitary specimen that performs such a feat; it is the combined force of the whole batch, or family, for they are united by bands of common brotherhood, which age and an acquaintance with the world, however, separate. But these tufts of mushrooms, shouldering each other as they do, are not the thin, lanky specimens we see sometimes, but thick, juicy, and all that could be desired. Now, it requires no great amount of logic to show how well the place they are growing in suits them; the capabilities of the bed for a successional brood is also of no mean order; and though the crop may, and often will, appear as more the result of chance and caprice than of management, still some little assistance in the latter tells in many cases.

Our object in pointing to these luxuriant clusters of mushrooms produced almost spontaneously, is to show in what manner mushroom-spawn may be obtained, or, in default of that, in which way it may be formed artificially. Our mode of making it, is to collect a quantity of horse-droppings, also some of sheep, or deer, and the same of cows, about one-half being of the latter; these are spread out on some dry, smooth bottom, and chopped and trodden together until the whole mass be of the consistence of brick earth. This cannot well be accomplished at once. It is, therefore, better to leave it for a day, and return to it again, when a little fibry loam may be added, and the whole beaten or trodden, and regularly mixed, and eventually spread out to a thickness of about three inches, when it may be cut up with a spade into pieces about the size of a brick, and allowed to lie then a day or two, to partly dry, turning the bricks as soon as they will allow of it; and by setting them on edge on a dry, fresh place, the extra moisture leaves them much quicker. When they become so that the finger can only with difficulty indent them, they may be carried into some warm corner of a shed, and piled up, adding some pieces of old spawn as you proceed, which can be placed between the layers in such a way as to keep them open; covering the whole with litter will be all that is wanted for some time, and as we suppose the heap to be only the size of a cart-load of matter, heating so as to take harm is not likely to occur. In about a fortnight examine the heap, and see if there be a mass of fine, white thready matter running into, around, and through the pieces of stiffened compost. If this singular material be likely to omit impregnating any outside piece, removing that nearer the centre, and bringing another piece out, will generally effect a change. In about three weeks, or so, the whole will be sufficiently innoculated to keep, and to prolong it further would endanger those pieces breaking out into a crop of mushrooms at once, which it is desirable to avoid; breaking a piece or two will enable any one to tell, as it ought to smell like a mushroom, and be in a manner matted together with these white filaments we have been speaking of. Nothing more is required but to put them away into some dry place, and to lay them thin until they become perfectly dry. They will keep for years, but as the trouble is not very great, we usually make some fruit every year, and where beds are made up late in autumn or winter, we are enabled to use the spawn less sparingly than if the supply was limited.

We may add, that August is better than September for making the spawn; but there is yet time to do it, provided the materials be at hand, and the weather and other things propitious. Remember, we use no water, neither do we let the rain fall on the bricks; but as there is often a period of settled dry weather, much of the work, in fact, the whole of it, may be done out-of-doors without any danger, and in very few cases does spawn, so prepared, fail to produce a crop, when other things are likewise favourable. Preparation must also be made for *Mushroom-beds*. When there is a proper

house for them much difficulty that way will be avoided; when there is not, any old shed will be of service, as, with a little extra care in covering up, and a little more liberality in the dung used at the making of the beds, we have seen very good crops in such a place. Horse-dung, however, with a part of the litter amongst it is best, only it ought not to be in the least heated; and in preparing it care must be taken that it does not get over-heated; turning every other day must be practised for a time, then every third or fourth day, until the heat moderates. We like a little sheeps' dung to mix with it, when it can be had. It often happens, at this season, that sheep have the habit of lying and depositing their dung on roads or paths running through their walks. In such places it may be obtained without much trouble, and certainly no detriment to the spot it is removed from. We like a little of it in mushroom-beds, on account of its stimulating powers, and the quantity may be increased in those thin beds made up in ordinary mushroom-houses. J. ROBSON.

THE POULTRY SHOW OF THE ROYAL NORTH LANCASHIRE AGRICULTURAL SOCIETY.

THIS was held at Preston on the 26th inst., and proved highly attractive to a very numerous and respectable company.

The number of entries were (for premiums and sweepstakes) very nearly 200, and, with but few exceptions only, all were exhibited that were entered. Upon the whole, it was a much better show than the council had anticipated, and the arrangements were such as reflected the highest credit upon the Secretary, Mr. Hunt, whose indefatigable exertions had procured so much comfort and completeness for the stock, and so much accommodation for the public.

Many of the pens of fowl exhibited were, in points of excellence, never surpassed at any former show; but we must observe they were sent by two of the most successful amateurs in the kingdom. There was but one prize in each class offered, but two classes in each variety—viz., for cock and two hens, and for six chickens.

The *Dorkings*, which stand first on the list, were closely contested, and upon the whole good; the pens which obtained the prizes were really first-rate birds. The six chickens in this class gained the society's silver medal for the best pen of poultry in the yard, and well, we think, they deserved the distinction; and it is not saying too much in their praise to add, that they were the very best pen of poultry we ever saw penned together of any variety, for nothing was wanted to make them perfect of their kind; they possessed size, colour, and character, and were besides in excellent condition. The exhibitor was T. T. Parker, Esq., Sutton Grange, St. Helen's.

The *Spanish* fowl shown by Capt. W. Hornby, R.N., of Knowsley, near Prescot, were remarkably good birds, and carried away both prizes, especially the six chickens, which, besides showing great purity of race, promised to possess greater size in maturity than the birds hitherto so successfully shown by that gentleman.

The *Game* fowl were, as a class, very inferior; the prize pen even were so poor that they scarcely deserved the award.

There were, as usual, more entries of *Cochin-China* than any other breed, and, as usual, a preponderance of bad ones; but the prize birds were in excellent condition, had the characteristics of the breed well developed, and were nicely matched in colour, which was the favourite buff, with a few marginated feathers on the hackle of the neck. The other varieties were badly represented, and in some classes none at all.

The judges deemed it necessary to withhold many of the prizes offered by the society, as the specimens competing were unworthy the distinction. The *Geese*, Aylesbury and Rouen *Ducks*, were all good, and generally deserved the highest commendation; indeed, it would have been impossible to have selected a bad specimen from the whole of them.

The judges were Mr. J. Bissell, Birmingham, and Mr. Higson, of Preston.

LIST OF PRIZES.

Dorkings—Cock and 2 Hens. Prize, T. T. Parker, Esq., St. Helens. Highly commended, Rev. William Hornby, St. Michael's-on-Wyre.
Spanish—Cock and 2 Hens. Prize, Capt. W. Hornby, R.N., Knowsley.
Game—Cock and 2 Hens. Prize, W. Allison, jun., Esq., Park Hall, Chorley.
Cochin-China—Cock and 2 Hens. Prize, T. T. Parker, Esq., St. Helens.
Golden-pencilled Hamburgh.—No entry.
Silver-pencilled Hamburgh.—No entry.
Golden-spangled Hamburgh—Cock and 2 Hens. Prize, Ed. Allison, jun., Esq., Chorley.
Silver-spangled Hamburgh—Cock and 2 Hens. Prize, Mr. T. J. Garrington, Preston.
Polands—Cock and 2 Hens. No entry.
The best of *any Breed or Cross*—Cock and 2 Hens. Prize, Mr. Geo. Banks, High Gate, Kirkby Lonsdale.
Geese—Gander and 2 Geese. Prize, T. T. Parker, Esq., St. Helens. Toulouse. Highly commended, T. T. Parker, Esq., St. Helens.
Ducks—Aylesbury Drake and 2 Ducks. Prize, W. Ellison, jun., Esq., Kendal. Highly commended, Capt. W. Hornby, Knowsley. The whole class commended.
Ducks—Rouen Drake and 2 Ducks. Prize, T. T. Parker, Esq., St. Helens.
Ducks, any other variety—Drake and two Ducks. Prize, Mr. W. Pindar, Whalley.
Turkeys.—No entry.

YOUNG POULTRY.

For the best six *Goslings*.—Prize, T. T. Parker, Esq., St. Helens. Commended, J. P. Lord, Esq., Wigan.
For the best six *Aylesbury Ducklings*.—Prize, Capt. W. Hornby, R.N., Knowsley. Highly commended, Mr. J. Hodgson, Halifax.
For the best six *Rouen Ducklings*.—Prize, T. T. Parker, Esq., St. Helens.
For the best six *Ducklings of any other variety*.—Prize, Mr. J. Lidgreaves, Preston.
For the best six *Dorking Chickens*.—Prize and Society's Silver Medal, T. T. Parker, Esq., St. Helens. Highly commended, Rev. W. Hornby, St. Michael's-on-Wyre.
For the best six *Spanish Chickens*.—Prize, Capt. W. Hornby, R.N., Knowsley.
For the best six *Game Chickens*.—Prize, Mr. Richard Hinde, Lancaster.
For the best six *Cochin-China Chickens*.—Prize, Capt. W. Hornby, R.N., Knowsley.
For the best six *Malay Chickens*.—No entry.
For the best six *Poland Chickens*.—Withheld.
For the best six *Chickens of any other breed*.—Prize, Shanghai, Mr. M. Carter, Preston.

The sweepstakes were generally won by the same gentlemen as carried away the prizes offered by the society.

[We are exceedingly obliged by this report, but we must observe that we think the value of the prizes, *five shillings*, very far too small, and the more so when even the winners, after paying their entries, must have been considerably out of pocket. If the society wishes their Poultry Show to continue prospering they must increase the value of each prize.—ED. C. G.]

WILD BEES.

By H. W. Newman, Esq.

(*Continued from page* 341.)

I shall now proceed to notice the extraordinary habits of the drones, or males, of all these species of wild bees, my first discovery of which was with the *Apis lucorum*, and purely accidental. They leave the nest but *once*, never to return!! after the hatching of the females in July and August. When about thirteen years of age, I began to collect nests of bees, and place them in my garden. In the months of June and July, I used to employ my idle hours in looking for their nests, and meeting with a very strong and numerous one, about the 15th of July, in a wood, a schoolfellow accompanied me to take it. We were armed with a large knife, two wooden boxes with holes and stoppers to hold the bees. The nest (*Apis lucorum*) was so numerous, that at fifty yards distance I could see them ascending and descending to the place. The flight of this species is much higher in the air, and steadier than any of the others. After an hour's labour we got to the combs, and succeeded in capturing no less than *five hundred* bees, including a new hatch of about fifty drones; these were all brought home, with nearly all the combs. Having left a small bit of comb to decoy the stray bees, we returned home. This nest contained *eight hundred* bees! fully *two hundred*, or *three hundred* bees more than in any I ever found before or since. It contained three full quarts of combs, and there was nearly a pound of honeycomb filled. It shows how much sometimes a good season,

with good situation, will do. Mons. Huber mentions about *three hundred* bees as near the number in a strong nest; but the majority, particularly in a wet season, contain a much fewer number. The nest was found near the root of an old tree (in a wood) which had been cut down many years, and the combs were so placed, that any wet from them was drained into a large space of hollow ground beneath. Near the new nest, I found, in another compartment, the remains of a nest full of decayed combs of the previous year. I have no doubt that one of the females had issued from this and *planted the colony* in the *same spot!* For three mornings following I visited the nest, and collected nearly two hundred stray workers, which were either lost in the bustle of disturbing the nest, or were out at work. However, I am indebted to this nest for my first observation of the wonderful habits of the *males*, and which was afterwards confirmed to me many hundred times. My garden was almost two miles from the nest, and having collected nearly the whole, excepting some few drones which escaped, I do not think any of the bees which I brought home went back to the old nest. Next morning early, having opened the aperture in the wall where I had placed them, the bees sallied forth in the most cautious manner, each worker bee, as it came out, remaining on wing very near the entrance, on which it made the closest observation, going farther and farther until it took flight. About ten o'clock, when the sun became hot, several drones found their way out, and flew off without *looking behind them*, or making observation like the workers, and during the week nearly the whole of the males departed never to return. When *taking* the nest, I observed the same thing; those which escaped never returned, like the workers, to *visit the spot*. To test this, I took several other nests of the same species, and placed them in very small hives made by the shepherds, and found the same result. Within the first fourteen days after the drones and females are hatched they voluntarily depart, and commence searching for food for themselves, which they do until the end of September, or later, when they perish. Divine Wisdom has deprived them entirely of the power or faculty of returning to, or *finding* the nest; indeed, they make not the least observation on their departure like the workers. The male bee of this species is a very handsome insect, and so unlike the *worker*, that it cannot be mistaken for it, being nearly all over of a light buff colour, with a black stripe on the back, excepting the abdomen, which is white.

How wonderful is the provision of nature when we contemplate it! These drones have the faculty of gathering honey, but for *themselves alone*, during their voluntary and necessary exile.

We see plainly the finger of a superintending Providence in these minute points. The hive bee lives in a most powerful and numerous community, and expels its lazy drones (which are of entirely different habits) by *force*, after their term of usefulness in the hive is past; but the humble bee, a more inoffensive character, docile, and very tractable, exists in a very small habitation, with numbers too few to act offensively; and Infinite Wisdom has provided the males of each of these species with the full inclination and instinct to leave the nest *once*, but without the power, or faculty of returning to annoy the workers any more, and this perpetual and voluntary banishment is accompanied by the power of subsisting by its own industry on the flowers while they last.* In the evenings of each day they hide themselves in warm places. The *early* part of the day is spent by the drones in getting a little honey; they then employ themselves in making visits, a *round of which* is continued for a couple of hours, or more, to particular spots, trees, bushes, &c., generally within a few hundred yards from their deserted habitation. It was after long observation I discovered "drone haunts." After due consideration, I firmly believe it is ordered by the "Great Architect of the universe," that these extraordinary movements are to compensate them for their voluntary banishment, and is intended to occupy their time, instead of their resting in the nest. I am willing to prove this curious fact to any naturalist in the months of July and August. Each species has *different* haunts and modes of showing these flights, which I will explain in my description of the three other species. For four or five summers, I never had less than half a-dozen nests of the *A. lucorum* and *terrestris* in my garden; these were brought a full mile from the original nests. I watched the progress of each, and particularly the hatching of their beautiful drones, and invariably saw them depart within a few days after without making the smallest observation of the place. I never saw *one return*, nor any male make its exit, in connexion with a female. My colonies of these bees were *one* or *two*, always in an old wall; *several* in very small hives made of coarse rushes or straw by the shepherds in the neighbourhood; and some in a warm place in their own soil—the earth; these last always did the best in a dry summer. The combs and bees were placed in their wooden boxes, such as are used by druggists, and when they became settled the boxes were removed, and a covering placed over to prevent the dirt falling in on them. The difficulty in the *ground* is in wet weather, to *drain* the place properly; for the wild bees are in general most judicious on this point in their natural state; they usually choose loose ground where the water sinks below their combs. This species of bee is the only one which interferes much with the hive bee in "choice of flowers." In 1841, I remember well seeing some hundreds of the *A. lucorum* and *terrestris* on some lime-trees in full blossom, and many remained until it was so dark, that they could not find their way home; so delicious and intoxicating a blossom is the lime. In the morning (in consequence of a storm in the night) I found some dozens of these workers in a torpid state which had fallen on the ground, and I amused myself for some time in recovering them, for I have been able to catch this, and all the species, with my naked hand without being stung.

The most determined enemy to these bees are the field mice, which destroy more than two-thirds of them all over England. Near villages and small towns, I have found their nests more numerous, which I attribute to the number of *cats* which destroy the mice. Another enemy is a caterpillar, which gets into the outer-coating of the combs of the *A. terrestris*, and destroys the nest, if not discovered and killed. Each species of wild bee has its own peculiar mode of going its *round* in fine weather; some near the ground, others through hedges, trees, shrubs, &c.

(*To be continued.*)

* When the drones are ready to leave the nest, the queens are hatched. I am indebted to a friend of mine, W. H. L. Wolcott, Esq., of Clifton, for a very good explanation of the vagabond drones, which make such extraordinary rounds, and which puzzled me for many years to find out. Mr. W. says that those drones are the unfortunate ones which have not been mated with queens, there being but a small proportion of them wanted for this purpose.

CONSTRUCTION OF GREENHOUSES AND PITS.

I am tempted to send you an account of some experiments and contrivances which I have lately been undertaking with respect to the construction of greenhouses and pits. My first point is in connection with glass; the second, concerning a mode of heating. I have just had some small pits erected, and warmed by hot water, and, in order to add to their efficiency, I have had them double-glazed; that is, there is a layer of glass, then a stratum of air, then a second layer of glass, so that between the two frames of glass is enclosed a stratum of air, which is a non-conducting medium, and therefore calculated, I believe, to add much to the warmth of the pit. I glaze with small glass, 16-oz., six inches by four inches, which I can purchase for 1d. per foot, consequently the layer of glass is actually as cheap as a bass mat, which it is intended to supersede, *i.e.*, a bass mat of the size of two-light, or six feet by four feet, costs 1s. 6d., and lasts a season; the glass is 2s., and lasts for years, and the time saved in covering and uncovering will be soon equal to the odd sixpence, added to which, my plants will have daylight as soon and as long as daylight exists. The mechanism for double-glazing will be easily contrived by one for themselves; mine is thus accomplished—a small rabbit is sunk in the stile into which the glass rests; a layer of putty is spread over, and then a lath screwed over it. The under glazing is flush, and does not overlap—is not imbricated, as we say in botany.

With regard to the second notion—I have as yet only

experimented on a small scale, and I have not yet fully determined to carry out the plan this year or not. It is a mode to obtain an equable, though low, degree of heat, sufficient to keep out frost, and especially calculated for cold pits. The notion is, I believe, entirely original; but there is nothing new under the sun; and it may be, after all, that the plan is old and known; but I am only an amateur and have not yet heard of its adoption. I believe it to be well worth a patent, but as I do not intend to dabble in such stuff, I make a present of it to THE COTTAGE GARDENER. The source of heat for my pits is the earth, at certain depths—the deeper the better. Say, a pit is erected over a well, and glazed with my mode of double-glazing, and built of hollow bricks. We all know that water never freezes in wells of any depth; the air in contact with the water becoming warmed by it would, of course, rise, and the upper stratum, as it cooled, fall; thus the pit would be kept at a temperature constantly above the freezing point, which is all that is required for cold pits. Now, if this, on trial, should be found to be too damp, then a different scheme could be adopted, either by interposing, between the well and the pit, a sheet of galvanized iron; or, what would be best, to immerse a coil of cast iron, or other pipe, in the well, or deep hole, and have another coil once or twice round the pit; by this mode the warmth, without the damp, would be obtained. The first of these plans would be very cheap—all cost of fuel would be avoided; and, by the second plan, the first expense would be all the cost. I have not yet erected a pit on this plan; but last year I made the following experiment: I have a deep drain going through my garden which is about fourteen feet below the surface; over a six-inch pipe, which leads down to the main drain, I hung a self-registering thermometer, and covered it with two hand-lights, one above the other; near to the spot I suspended another thermometer of the same make, and while this fell as low as 28°, that over the drain, and, protected by the double glass, never got lower than 42°.

The advantages of this plan may be thus summed up: an equable heat; never too hot or too cold. Constant action without attention. No expense for fuel.—W. H. O.

[A well in a greenhouse will not keep the air in that house from sinking below freezing. The water becomes cooled down to 33°, and then the air above it does not perceptibly circulate, though the air in the greenhouse is much colder. Double-glazing, which is an old plan, may be frequently adopted with economy now that glass is so cheap.—ED. C. G.]

PREPARING STOCK OF BEDDING PLANTS.

As the season is fast approaching when we begin to prepare our winter stock of bedding plants, I venture to send you the particulars of a plan which I have pursued for several years with the most satisfactory results, and which, I think, may possibly be of service to many of your readers. Towards the latter end of August, I mark out a space in the warmest corner of my garden, about two-feet-and-a-half wide, and large enough to take all the hand-glasses I can muster. The soil is dug out about half-a-spit deep, and I fill up the vacancy to the surface with broken crocks and cinders; on this is spread a layer of light sandy soil, about four inches thick, and then a layer of white sand, over which I then give a moderate watering. The first hand-glass is then pressed for a moment firmly down on the wet sand, and the marks which the edges leave behind are a guide in planting. I then insert, in rows about three inches apart, cuttings of the different *Verbenas* that I intend to bed next year. They have a gentle watering, and the glass is placed over them. They are kept damp, and carefully shaded from the sun until they begin to grow. When they are well-rooted the glasses are removed for a week or two, but these must be replaced before the autumn rains commence. If the winter is very severe, I may, perhaps, throw an old carpet over the glasses after two or three nights' frost, and if I do so, I always allow the covering to remain until the weather breaks, but I scarcely think that this is necessary.—T. B.

IMPORTED COCHIN-CHINA FOWLS: GAPES.

I HOPE ere long, by comparing notes, a more perfect criterion will be established; this, at the present time, is very much needed to enable amateurs to select thorough-bred birds. After a perusal of a number of letters I have lately received upon the subject of Cochin-China fowls, I am completely puzzled to know what constitutes a perfectly pure bred fowl; whether the bird should be feathered down the legs or not—whether the cock should have *any* sword feathers in the tail or not—whether the bird should be long or short upon the legs. From birds in my possession, which I know came direct from China, I have made the following observations:—The cock bird is of a dark red colour, with a dark hackle, edged with yellow; very fluffy about the thighs; each fluffy feather presents a very peculiar characteristic, viz., being semi-double, or as if it had been split from the apex to the base—I have never found the feathers thus in half-bred birds; the wings very short, and doubled under; comb, single, serrated, but not deeply so; legs, short, flesh-coloured in front, pink down the sides, somewhat feathered; a *few* sword feathers in the tail;* the crow generally ending in a prolonged kind of roar; weight, about 10 lbs. Hens, partridge-coloured; lay abundantly; very dark, middle-sized eggs; weigh about 7 lbs. or 8 lbs. each. Chickens feather slowly, cockrels even more so than pullets; when about three months old cocks weigh 4½ lbs., hens, 3 lbs. to 3½ lbs. each; roost on the ground at night; all of a quiet disposition, seldom or never fighting. Hens excellent sitters and kind nurses.

Having thus briefly particularised the distinctive marks belonging to this variety of fowl, allow me to mention a plan by which I have cured many of my friends' valuable chickens from that terrible disease amongst poultry—the *Gapes*. Many persons recommend tobacco-smoke as a remedy, but surely this is a very desperate one, at least I have always found it so; others recommend the extraction of the worms by means of a feather; this is a very uncertain mode, owing to the tenacity with which the worms hold; if, however, a perfectly *dry* feather is *slightly* covered with bird-lime, and then introduced into the gullet, turning the feather round all the while, upon the withdrawing of which the worms will generally be found adhering; by this means many a valuable chicken's life may be saved, provided the operation is carefully performed.—M.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

CLIMBERS FOR WARM AND COOL CONSERVATORY (*Michel*).—You will find much suitable matter in an article by Mr. Fish last week. From that you will perceive that *Bignonia venusta* will not do well in the cold house, even with the assistance of some heat at the roots. Perhaps you could get the top introduced into the warmer division, or you could move it altogether, and bring *Tacsonia manicata* out of the warmest division in its place. We should also be inclined to substitute *Passiflora Billottii* in the warmest end of the cool division, instead of *Tecoma capensis*, or even *Ipomœa Leurii*. Your whole arrangements are good at first sight; but we must read your letter again, and think the subject over, before we can state affirmatively that the heat requisite for *Combretum purpureum, Passiflora alata, Dipladenia crassinoda*, in the warmest division, will not inconvenience *ladies* sitting there, and injure the flowers about them, as in a floral *boudoir*. If the panels in the warm part you wish to keep green are exposed to a fair portion of light, then you may grow *Stephanotis floribunda*, or *Hoya carnosa*, or some of the *Æschynathuses*; or, if shaded, then the *Lycopodiums*, or mosses, mentioned lately by Mr. Appleby, would suit you.

INDIGOFERA DECORA (*A. W.*).—It requires exactly the same treatment as a Fuchsia. "Set it to work" in October or November; any degree of heat above 50°, until you come to 70° or 75°, according to sun-heat, will do for it; about 60° is the right heat for it, until the end of January, but 50° will do; a lower degree will not answer. The same pot will do for it from October to the first week in February; then three shifts before the middle of May, or blooming time, and no further shift all the summer. Any soil that will grow Geraniums well will do for it.

SOWING SMALL SEEDS (*S.*).—The best course to insure the sprouting

* If the sword or scimetar feathers are *long* the breed is not pure.—ED. C. G.

of very small seeds—such as those of *Calceolarias, Lobelias, Rhododendrons*, &c., is that which we always recommend. Fill the pot more than one-half with any rough common soil; any thing will do for the bottom half, as the roots do not reach it. For *Calceolarias* use sandy loam for the top half, and sift as much of it as will make a fine thin layer on the top for placing the seeds on; then water the pot, but so gently as not to displace any of the fine surface, and in less than half-an-hour the pot is ready to sow the seeds on. Sow them with the fore finger and thumb just as you would salt a sandwich, and about as thick. Then press the whole surface of the mould with the bottom of a smaller pot, or a smooth piece of circular wood; this is to press the seeds into the soil without covering them; then with the finger and thumb again sow the thinnest layer you can of the sifted soil over the seeds, and the work is finished. The dampness of the soil under the seeds will soon rise to the thin particles above them, so that the usual way of watering after sowing is dispensed with, and the danger of displacing the seeds is thus avoided. Before the pot wants more water the seeds are either sprouting, or are now so firm in their bed that a gentle watering will not move them. It is a good plan to put a piece of glass over such pots, and a handful of damp moss over the glass to keep all cool, moist, and dark, for a few days, when the Calceolarias are sure to be up. September is the best month in the year to sow *Calceolarias*, for those who have convenience to get them over the winter.

SALVIA PATENS SHEDDING ITS FLOWERS (*A Novice*).—The "cause and cure" of this failure—flowers dropping ere they open—are equally mysterious to us, after all the experiments you have tried with it in the greenhouse and open border. Perhaps your stock is from a seedling plant with that disposition born with it; at any rate, we would change the stock, after trying it in two or three places in the kitchen-garden, where, if it drops its flowers, your soil does not suit it.

COARSE LAWN (*Beds*).—There is no question or doubt about the best way, and also the cheapest in the long run, of improving a coarse lawn full of daisies and other weeds. The whole surface ought to be dug over a full spit deep, like a piece of the kitchen-garden, then relaid with turf which is free from all but the finer grasses, but no such turf can be bought any where, therefore, to obtain it we must sow seeds on purpose. The seed would answer any time from the first sowing of wheat in October, or a month earlier, to the time of barley sowing in the spring. As we dislike seeing the bare ground all the winter, we put off lawn sowing till the very end of March. The last week in March, and the first two in April, is therefore the best.

DISEASED RHODODENDRON LEAVES (*Verax*).—There was no trace of insects on the Rhododendron leaves. When the Indian breed of Rhododendrons are first turned out, or during very hot weather, or when too dry at the roots under a strong sun, if only for a few hours, they are very apt to turn brown in the leaves, just as yours looked to us. We never saw such leaves get wrong when the plants were turned out into the free soil, and we expect that some sudden check from want of water at the roots, and the very hot sun at the beginning of July, caused the mischief.

BEDDING GERANIUMS (*A. A. W.*).—For half-a-dozen of good bedding Geraniums, select *Punch, Compactum, Pink Nosegay, Tom Thumb, Mangle's Variegated*, and *Salmon*. The difference between a "Geranium," "Fancy Geranium," and "Pelargonium," is difficult to define; botanically they are nearly all alike. *Pelargonium* is the book name of all the pot Geraniums, but nine out of ten people think it a pedantic name, and to please them we usually use the name Geranium for all those we use in the flower-garden, to distinguish the bedders from the ones they show for competition; we often call the latter Pelargoniums; and the Fancies are a new race, with small flowers and gay colours, as *Queen Victoria, Ibraham Pacha*, &c. Get a plant of each, and that is the easiest way to understand the difference.

EARLY BLOOMING ANNUALS (*Rosetta*).—You are answered at page 354. The *Collinsias, Gilias*, and *Silenes*, are particularly suited to come in early, and to flower between bulbs while they are ripening their foliage. Your flower-garden figure is planted exceedingly well, and the only thing you require is to have a full bloom in May and the beginning of June, while the bedding plants are getting established; and that can only be done by annuals and such as are sown this month. Spring-sown annuals are next to useless on the bedding system, except those that bloom all the season.

FLOWER GARDEN (*Violet*).—Yours is a very pretty figure, and one of the easiest to plant. The four horse-shoe-like beds on each side of the centre diamond should be planted alike—that is, each bed on one side of the diamond should have the same plant, or the same colour and height of plant in the one opposite to it, either cross-cornerwise or straight. Eight annuals, to fill them in spring, you will find in our list, page 354. When the bulbs, and the Collinsias, &c., are removed, and the bedding plants are in, let all the bare places between the bedders be planted with annuals, to be sown now.

NOVEL HALF-HARDY CLIMBERS (*Queen Mab*).—Please your Majesty, we have nothing new in that style worth recommending, and all the *Eucalyptuses*, in or out of Australia, are not worth the shreds and nails to fasten them to walls. Where they will grow as trees and huge bushes they are excellent, but wall plants they are not. As this is not the time of year to plant out half-hardy or novel things, we will carry your Majesty's request with us on our visits, and in two or three months we shall be able to say what are the best and most appropriate. *Berberis tenuifolia* is the only one of them that requires a wall, and is worth it. None of the *Berchemias* are worth your while. The *Lardizabala triternata* is a fast-growing plant after the second year.

TRANSPLANTING HYDRANGEAS (*A Subscriber*).—They will easily transplant at any age or size. April is the best time to move them; and if they have made long bare roots beyond the great tuft near the surface, it is best to cut them back to the main stool.

COCHIN-CHINA FOWLS (*Ibid*).—Those without well-feathered legs, that is, not "booted," to use the technical phrase, do not possess all the characteristics of a first-rate bird. The more densely the outside of the leg is feathered, and the nearer in colour the leg feathers are to those of the other parts of the body, the greater the beauty, so far as the booting is concerned.

CINERARIAS (*S. S.*).—The whole of the new Cinerarias are entirely unfit for bedding—"the more's the pity;" but now is the time to prepare the Silver plant (*Cineraria maritima*), and also *C. amelloides* (a dwarf, blue bloomer, and one of the best to plant at the end of July), to succeed the blue Nemophila that was sown at the beginning of April. There is no plant that will *mix* with the *Ageratum Mexicanum*; but almost any colour, except the scarce one, *violet*, will suit it, inside a belt of it, or outside. The best way is to have it in the centre of a bed, then scarlet geraniums, and a white or variegated border outside.

BEES.—*K. F.* says:—"The hive B was driven into the new hive pronounced 'much too large,' which surprised her, as it only exceeds by a *trifle* the dimensions given by the 'Country Curate of Ross,' and the gardener (a Devonshire man) says, for good swarms they generally use *bushel* hives. However, the result is favourable (for this locality), it is nearly filled with comb, was hived June 30th, and a fortnight since had gained 11 lbs., but it must be confessed that none *remained* in the stock hive, through a little bad management; but being so late in the season, and the hive so large, that is not to be regretted. Perhaps it is foolish to intrude all this information on Mr. Editor's attention, as he must have forgotten all the previous communication; but that is thought of too late. Concerning A, the weaker of the two, it was also driven into a box in the greenhouse, but only a very small swarm issued; they are working extremely well (both the driven hives were fed for three days, or rather nights); at first, the stock A seemed to do well, and a prosperous colony was hoped for, but after three or four weeks they ceased to work, and it was concluded that they had not been able to procure another queen, neither were drones ever seen, and as *K. F.* had not then seen the remarks in the July number, and on weighing, found it very light, she thought it better to join them, as advised, by fumigation, to their friends in the greenhouse; not having succeeded in procuring German tinder, paper soaked in sulphur was used, which seemed to answer, but that they too soon recovered. However, they were put into a bell-glass of nine feet diameter, on the top of the box, and a piece of perforated tin over the whole; the next morning the tin was withdrawn, thinking to follow the direction of 'The Country Curate's' *English Bee-keeper*, page 60, and that they would unite, when lo! there was soon a pile of slain at the bottom of the box; the whole community was in excitement, carrying out their victims as fast as possible. After witnessing this warfare with much regret for a couple of hours, she replaced the straw hive, and carried the glass, with its remaining contents, into the garden, and there seemed yet a great many. That was a fortnight since, and she thought to attempt the union again, by fumigating both parties; but alas! how they have disappeared is a mystery; but there are none to be seen in the hive, though occasionally one or two enter—perhaps strangers. The end and aim of this long history is only to beg the favour of any little hint as to the probable cause of failure." "*Better luck next time.*" "*Practice makes perfect.*" Let "K. F." derive consolation from these wise proverbs. The "Country Curate" has not been able to guess the cause of "K. F.'s" *mishaps*, because he is ignorant of the particular method of treatment of A. and B. at swarming time. His directions in the "English Bee-keeper" cannot have been strictly followed, or success would have been the result. As to the failure of union of bees, attempted by setting a glassful of bees over a hole in the top of another hive, with a piece of perforated zinc interposed between them for several hours, there must have been a queen in the glass. Bees, *in this way*, will not peaceably unite, if each family has its queen. If "G. K.'s" bees only weigh 11 lbs. now of contents, they must be liberally fed till they attain a weight of 20 lbs. *contents*.

BEES.—*Cymro* says—"I have one hive of bees, and have been promised the bees of four hives at the taking of the honey (three of them are three miles away, and one about quarter-of-a-mile). If I united the three or four lots to my present hive (common straw, with the centre hole stopped up by a pin of wood), would it not be necessary to increase the size of the hive by placing another under it—say an eighteen-inch square hive, which next year could be made the stock hive, and allowed to swarm to increase the number of hives, which would be strong ones: would there be any advantage gained by this proceeding? I should have said that I am to fumigate the bees with Racodium; what length of time should the smoke be kept blown into the hive, so as not to carry it too far? A cottage bee-keeper told me that he once found a swarm of bees in a hedge in a field, and took them home, and hived them, and put them along-side of others in his garden, and found that they were continually at war with each other. Numbers were slain, and, fearing the loss of all his bees, he was obliged to destroy the stray swarm. How can it be accounted for? On referring to a back number of THE COTTAGE GARDENER, I find that you say, bees from every county would live peaceably together in the same place?" The common straw hive, with a centre hole, will suffice for the four lots of bees. Do not use the square hole under it, if unnecessary; you will not get the bees to work in it now. The smoke may be kept in the hive until everything is perfectly quiet, after most of the bees have dropped down. If you use the *dredger*, have the spike at least five inches long. The bees fought, probably, because there was little honey to be obtained in the fields.

CHRYSANTHEMUMS TURNING YELLOW (*Tyro*).—The most of the sorts you mention we have often seen yellow-leaved. Your soil may be of a too-adhesive character, and, probably, you water all your chrysanthemums alike. You say they are well-drained, but, probably, not well enough. Yellowness and sickly appearance is caused from either stagnation of water, or sourness of soil at the root. Stir the surface well, and let them get dry before they are watered again. It is too common an occurrence to see an inexperienced grower water all alike, whether already too wet or not.

TAKING HONEY.—*Mr. H. W. Newman* says:—"Your correspondent, *Rusticus*, inquires the best way to take honey at this season, without destroying the bees. I have mentioned in THE COTTAGE GARDENER my own idea of 'humanity.' I am no advocate for driving or any

forcible deprivation; it renders the bees very vindictive and restless for a long time, and numerous casualties in death of stocks take place if not done with great judgment. Should a bee-keeper be very sensitive about killing his bees, he must go to considerable expense in purchasing all his hives and boxes with proper covers to contain glasses of all sizes, suited to the nature of the season. I am one of those old-fashioned apiarians who think that the quiet mode of deprivation is the only safe one. Suppose a man keep ten stocks of bees, and is able to take eight full glasses of honey, the purest of all, this is much better than running the risk of taking too much by driving or fumigation. It is very easy to talk of turning up a populous hive, with 40 lbs. weight of honey, on 15,000 bees, and placing an empty hive on the top, to beat the full hive until all the bees have gone up into the empty one! and so cut and carve the combs, *ad libitum*. When the hives are separated, what can the bees be about? quite quiet, of course; then, after all the uproar and confusion, the deprived stock is to be returned to its place, and the bees in the empty hive placed near so as to allow them to return. Let *Rusticus* adopt the glasses and small boxes if he will, and cut them with a copper wire as they are filled; he will find this a much more suitable plan for his own comfort, and that of the bees also, there being always this difference, that in the deprivation by glasses the main body of the bees is not disturbed, and no danger done to the honey by puff balls in sulphur."

TAKING HONEY.—*A Worcestershire Man* says:—"A few days ago a sudden fancy came over me, and a friend who was staying with me, to take a common straw hive of bees by storm. He dressed himself in a veil, thick leather gloves, and great coat, tying his wrists and legs round with string, and having made himself impervious to the bees, he deliberately marched up to the stand, took away the full hive to the distance of four yards, having first put a new straw hive, ready prepared, in the place of the old one. He placed the old hive on a wheelbarrow, shook out the bees, and at once cut out the comb, and laid it on dishes on a table previously placed near the barrow. It was the operation of a few minutes. The bees returned to the new hive; but it became evident, in the after-part of the day, that the queen bee remained in the wheelbarrow, from the bees leaving the new hive and clustering round her. The new hive was removed to the barrow, over the cluster of bees, and at night replaced on the stand. The bees all appear to be settled, and beginning to work. Will the bees be able to support themselves at this late season, or would they have been, had the process taken place a month ago? It was evident that the bees, during the last three weeks' wet weather, had been living on their honey. What is the objection to this plan, which involves no expense whatever, and was performed without a single sting?" [There is no objection to the above plan (which I have often adopted to expel bees from a hive), save the danger of destroying the queen, who will be often crushed to death in process of cutting out the comb, for she is generally the *last* to quit the comb under the circumstances of this treatment of the hive. Unless your correspondent have liberally fed his bees already, they will certainly have all died by this time; and if he does not feed them with as much prepared food (honey, or sugar-beer or sugar-water,) as they can eat during the next month, they must die during the winter, for they have comb to make, as well as honey to store, for their winter supply.—A COUNTRY CURATE.]

LOVELL COCHIN-CHINA FOWLS.—*An Old Subscriber* says—"I have had them some time, and did I not desire to show Cochin-Chinas for a prize, I should prefer the Lovells to any other kind whatever; but they cannot be made to weigh more than six or seven pounds, the hens, and nine pounds *very good* male birds, and this would prevent them from taking a prize *now* as Cochin-China fowls. For beauty they surpass the large kinds; they have short legs, well feathered, small bone, beautiful white flesh, quite equal in that respect to the Dorking; they fatten fast—indeed, if well fed, need no cooping for the table; they are extremely *hardy* (having escaped the roop when all my other fowls have had it), and much tamer than any other kind; their feathers are beautifully downy;—in short, I think they possess all the good qualities of the Dorking as well as of the Cochin-China; and I would not be without a few of them on any account. Two pullets I hatched in January last began to lay in May, and, notwithstanding their extreme productiveness, are excessively fat. Should any of your correspondents wish for the stock, I will supply them at a reasonable rate, as I have two or three pairs more than I want, and also some excellent Cochin-China chickens, from a splendid male bird of Mr. Holt's, and a Sturgeon hen. As an amateur, I do not want to make a high price of them; but I think it a pity to eat them, when so many would be glad of them for stock."

VINEGAR PLANT (*Ibid*).—"I see some of your readers are enquiring for the Vinegar plant, the only *economical* thing for producing pure, wholesome vinegar, of an excellent flavour. Any one enclosing 4s. 6d. worth of postage-stamps can have one sent to them, with directions for ensuring a constant supply of good vinegar for about 3d. a gallon. The money will be applied to a charitable purpose." Any person who applies for these must send the application in a stamped envelope.

GOLDEN AND SILVER PHEASANTS (*D. L.*).—These are not tender. Mr. Nolan says he has kept the Golden Pheasant in an open aviary at all seasons, and found it to be an earlier layer than either the Silver or Common Pheasant. He recommends them to be treated exactly like the latter. The white Lily with pale pink spots, if shaped like the Martagon Lily, is no doubt *Lilium lancifolium punctatum*, and the pink with crimson spots, *L. L. speciosum*.

AGE AT WHICH FOWLS BREED (*A Novice*).—Buy *The Domestic Fowl* in the series of Richardson's Rural Hand Books. For *Spanish fowls* apply to Capt. Hornby, R.N., Knowsley Cottage, Prescot. Pullets sometimes begin to lay when only five or six months old; but neither pullets nor cockerels should be used for store until eight months old. Hens will lay without any intercourse with a male bird, but whether they lay as well, or as soon, we cannot say.

CATERPILLAR (*X. Y. Z.*).—If it has a horn or hook at the tail end, your description agrees with that of the *Privet Hawk Moth*—2½ inches long, bright light green, with seven stripes of lilac and white on each side.

BEES (*W. W.*).—If in a straw-hive, we know they will thrive with no other protection than a milk-pan turned over them, and sheltered from the wind by shrubs. We do not know the price of Mr. Taylor's zinc shades.

VARIOUS (*T. Hill*).—Look to a previous page to a note about nails. *Zinc Wire* can be bought of any wire worker in London who advertises in our pages. *Peaches*, *Nectarines*, *Plums*, and *Apricots* will ripen on a slanting roof in Derbyshire, if trained on a trellis, and well protected from frost, &c., when in blossom, for the blossoms are more liable to be cut off by frost than when grown against a wall. The *advertisement* would be five shillings. We think five or six toes in a *Cochin-China* fowl is a mark of degeneracy, if it appears on more than one of a brood occasionally; for that may be an accidental malformation.

CHICORY CULTURE IN JERSEY.—*H. F.* has obliged us with the following:—Chicory is generally sown in April, in drills, one foot apart, and kept hoed and free from weeds, and taken up in the autumn, when the leaves decay, and dried and stored for use. It likes a sandy deep soil.

CHITTAPRATS.—*Cochin* says there are three varieties of these, and he will, therefore, be obliged by *Amateur* informing him which of the three he found to be the best layers, as mentioned by him at page 297.

LICE IN POULTRY (*Semper vigilans*).—Mix together equal parts of *Scotch Snuff* and *Pulvis Digitalis*; and, turning back the feathers, rub the mixture well in among their roots. If you have a large box of dry sand or coal-ashes in your loft, the fowls will keep themselves free from vermin. Your other question next week.

WORK ON GREENHOUSE PLANTS (*S. H. S.*).—Macintosh's little volume, called *The Greenhouse, Hothouse, and Stove*, will suit you.

POULTRY NOMENCLATURE—*T. G.*, "In the advancing state of poultry affairs, begs to suggest a nomenclature, which, with the slight alteration of one word, will describe the ages of our fowls. This now is done by circumlocution, and provincially varies so much, that the description of one district is with difficulty understood in another. I, therefore, propose that chicks of *the first year* shall be called cockerells and pullerets; birds of *the second year* stag-cocks and pullets; and *afterwards* cocks and hens, naming their years according to their ages."

FOWLS IN CONFINED SPACE (*S. L.*).—In your twenty-feet square yard, twelve-feet square hen-house, and the run of a meadow for an hour daily, no fowl is better suited than the Cochin-China. There is no remedy against a hen wanting to sit, except taking her from her nest and shutting her up for a few days. We never heard that hens in a confined space are more inclined to sit than those which have a wider range.

TULIP BED (*Rev. A. M.*).—According to your request, we have ascertained that Mr. Groom will arrange you a bed, and find the bulbs of a bed of thirty rows of first-class tulips, for fifteen pounds. The following are recommended by him:—*Cherry and Rose*: Aglaia, Catalani, Claudiana, Duchess of Sutherland, Duchess St. Albans, Emily. *Byblœmens*: Addison, Imperatrix Florum, Lewald, Michael Angelo, Mentor, or Reine de Sheba, Roi de Siam, Rubens. *Bizarres*: Catafalque (Dutch), Duke of Clarence, Garrick, Marshal Soult (Groom's), Optimus, Platoff, and Polyphemus. Now is a good time to prepare the bed. The following Tulips are new this season—*Rose*: Fleur de Marie. *Bizarres*: Dr. Horner, Marquis of Bristol, Earl of Derby, Duke of Northumberland, and Earl of Clarendon.

CALL-DUCKS.—*A Clerical Friend* says, "I should like to know something more about those exceedingly pretty little birds, *call ducks*. Naturalists do not seem to assign them a distinct position as a species, and yet besides the characteristic from which they derive their name, they vary from other ducks both in size and form. I have some beautiful dark coloured ones little larger than teal, but of a rounder figure."

NAMES OF PLANTS (*Brentingby Cottage*).—We think *Cochlearia acaulis*. (*Markham*).—Yours is *Origanum dictamnus*, Dittany of Crete. It belongs to the Natural Order of Lipworts, or Labiates, and to Didynamia Gymnospermia, Class and order of Linnæus. (*T. M. W.*).—No. 1, *Lantana crocea*; No. 2, *Veronica Lindleyana*. (*A Subscriber, E. N.*).—Your shrub from seed is *Asclepias parviflora*. (*Mary Theresa*).—Yours is *Statice tatarica*, increased by careful root and crown division, in either spring or autumn. (*W. S. W.*).—The fruit you sent was very much crushed, but we think it is of the *Momordica charantia*. We know of no use to which it has been applied. It is of a dangerous race, one of the same genus being the Squirting Cucumber, *M. elaterium*, a most violent and dangerous purgative. (*Investigator*).—Your specimens are so dried up, that we cannot even tell whether they are Pinks or Carnations. Why will not our correspondents pack in green, damp moss? (*W. C. Horton*).—*Coreopsis tinctoria*, and a variety of it called *atro-sanguinea*. (*Rev. R. M. E.*).—*Salvia fulgens*; not Abutilon but *Achimenes rosea*, or *coccinea*; the weed is Parsley Piert, *Alchemilla aphanes*; the red-berried plant is *Cratægus pyracantha*, or Evergreen Thorn; the *Phlox* we cannot name. (*S. H. S.*).—Your fungus is *Scleroderma cepa*; probably poisonous. (*R. Wells*).—Common Hemp, *Cannabis sativa*. (*H. B.*).—Your plants are, 1. *Lythrum salicaria*. 2. *Tanacetum vulgare*. 3. Specimen imperfect. 4. *Bartsia Odontites*. 5. A *Senecio*, not certain which. 6. *Achillea ptarmica pleno*.

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WEEKLY CALENDAR.

M D	W D	SEPTEMBER 16—22, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
16	TH	Wych Elm leaves fall.	30.572 — 30.460	66—52	N.E.	—	39 a. 5	11 a. 6	7 42	3	5 20	260
17	F	Peewits flock.	30.411 — 30.306	69—45	N.E.	—	40	9	8 7	4	5 41	261
18	S	Sycamore leaves fall.	30.273 — 30.117	66—47	N.E.	—	42	6	8 37	5	6 2	262
19	SUN	15 SUNDAY AFTER TRINITY.	30.063 — 30.025	66—45	N.E.	—	43	4	9 13	6	6 24	263
20	M	Syringa turns yellow.	30.065 — 30.020	67—42	N.E.	—	45	2	9 57	●	6 45	264
21	TU	ST. MATTHEW.	30.026 — 29.993	65—49	N.E.	—	47	v	10 51	8	7 6	265
22	W	Sun's declination, 0° 9′ N.	30.055 — 30.005	67—39	N.E.	—	48	57	11 55	9	7 26	266

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 67° and 46° respectively. The greatest heat, 84°, occurred on the 17th in 1843; and the lowest cold, 29°, on the 17th in 1840. During the period 95 days were fine, and on 80 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

(*Continued from page* 349.)

ACTÆA. BANE-BERRY.

GENERIC CHARACTER.—*Calyx* below fruit, of four roundish-oblong, concave, blunt, deciduous leaves. *Petals* four, alternate with the calyx, oblong or reversed-egg-shaped, with claws, deciduous. *Stamens* numerous, about thirty. *Filaments* cylindrical, swelling upwards. *Anthers* of two lobes, on the inner side of the summit of each filament. *Germens* egg-shaped. *Style* none. *Stigma* round, thick, obliquely depressed. *Berry* nearly globular, with a lateral furrow, smooth, of one cell, not bursting. *Seeds* numerous, semi-orbicular, depressed, ranged vertically over each other in two rows.

ACTÆA SPICATA. Herb Christopher. Black Bane-berry.

Description.—It is a perennial. *Root* creeping and rather fleshy, black outside, and yellow within. *Root-leaves* on foot-stalks, which divide into three, these are three-leafleted; each leaflet is egg-shaped, three-lobed, deep shining green, from one to two inches long, and sharply saw-edged. The leaflets on the flower-stem are smallest. *Stem* three-sided, from twelve to eighteen inches high, leafy, slightly branched. The whole *plant* nearly or quite smooth. *Flowers* several, in a rather close cluster, or spike, each flower with a small *bracte* just below its downy stalk; *petals* white, with a slight pinkish tinge; *stamens* rather longer than the petals, with thread-like filaments, and with a knobbed anther. *Berries* purplish-black, shape and size of a small pea, juicy; *seeds* about twelve.

Places where found.—In woods and shady places; very rare. One or two places in Yorkshire, Durham, Westmoreland, and Essex, are the only spots where it has been discovered.

Time of flowering.—May and June.

History.—The generic name is derived from the Greek word *actaia*, shore-loving, which is not applicable to this species, further than that as it prefers damp, shady places, it might flourish on the wooded banks of a stream; *spicata* refers to the spiked form in which the flowers cluster. The whole plant is acridly poisonous. Children tempted by its glossy berries have died from eating them. Preparations of the plant have been used to repel tumours; and the root has been administered in some diseases of the nerves, but great caution is required in using it. The juice of the berries mixed with alum affords a black dye. It is said that toads resort to it, being gratified by its fetid smell. This requires confirmation; and Dr. Withering's explanation that toads are perhaps found near it because they also prefer damp situations, seems singularly unsatisfactory, for toads prefer dry, warm places. Sheep and goats eat it, but it is rejected by horses, oxen, and pigs. (*Smith. Martyn. Gerard. Withering.*)

THE prize offered by the London Horticultural Society having roused attention to the difficulties of obtaining late crops of peas, we shall not be doing a small service to our readers by placing before them the results of some researches upon the subject. The chief cause of failure in obtaining autumnal crops of peas is the violent dissimilarity of temperatures to which their stems and leaves are exposed, whilst their roots are enjoying a temperature equable and high. We have found, from repeated experiments, that in a light loamy soil—the only one fit for late peas—in July, August, September, and October, except during a long series of rain, the temperature of the earth at nine inches below the surface never rises above 70° nor sinks below 55°. On the other hand, the temperature of the air, during those months, ranges between 90° by day and 30° at night. The contrast of the moisture of the soil and of the air, at those seasons, is quite as extremely in contrast. The soil is usually in a state of excessive dryness; whilst the air by day has a high degree of moistness, and deposits at night heavy dews upon all vegetation.

Such extremes and contrasts invariably produce exudations of sap, gangreen, and their consequence, mildew, the popular name for fungi, on the growing juicy foliage of plants exposed to them. The means of preventing these results, so fatal to all hopes of productiveness, are such applications to the soil as may keep the moisture in it proportioned to the active consumption by the roots caused by the high temperature of the soil; and such shelter as may keep the leaves and stems of the peas from exposure to such excessive variations of temperature.

Peas, of the Prince Albert, or any other Charlton variety, sown about the 14th of June, beneath a west wall, on a light loam, deeply trenched, may almost invariably be made to bear a good crop in October, if sheltered at night, and during mid-day, by a canvass screen or blind reaching from the wall to the ground. The best mode of sowing is in a single row, about three feet from the wall. We adopt the mode of sowing and culture recommended by Mr. Knight in the extract with which we shall conclude these remarks, but, instead of covering the peas in the drill only with earth, we draw over them a little of the soil, then add a quarter-of-an-inch of fresh stable litter, and sprinkle a little of the soil over this, so that the seed is buried altogether not more than three-quarters-of-an-inch. The mulch keeps the moisture of the soil from evaporating away from the roots.

Mr. Knight, in a paper read before the Horticultural Society so long since as 1813, says:—

"The secondary and immediate cause of this disease (the White Mildew), and of its congeners, have long appeared to me to be the want of a sufficient supply of moisture from the soil with excess of humidity in the air, particularly if the plants be exposed to a temperature below that to which they have been accustomed. If damp and cold weather in July succeed that which has been warm and bright, without the intervention of sufficient rain to moisten the ground to some depth, the wheat crop is much injured by mildew. I suspect that, in such cases, an injurious absorption of moisture, by the leaves and stems of the wheat plants, takes place; and I have proved, that under similar circumstances much water will be absorbed by the leaves of trees, and carried downwards through their alburnous substance; though it is certainly through this substance that the sap rises under other circumstances. If a branch be taken from a tree when its leaves are mature, and one leaf be kept constantly wet, that leaf will absorb moisture, and supply another leaf below it upon the branch, even though all communication between them through the bark be intersected; and, if a similar absorption takes place in the straws of wheat, or the stems of other plants, and a retrograde motion of the fluids be produced, I conceive that the ascent of the true sap or organisable matter into the seed-vessels must be retarded, and that it may become the food of the parasitical plants which then only may grow luxuriant and injurious.

"This view of the subject, whether true or false, led me to the following method of cultivating the pea late in the autumn, by which my table has always been as abundantly supplied during the months of September and October as in June and July; and my plants have been very nearly as free from mildew. The ground is dug in the usual way, and the spaces which will be occupied by the future rows are well soaked with water. The mould upon each side is then collected, so as to form ridges seven or eight inches above the previous level of the ground, and these are well watered; after which the seeds are sowed, in single rows, along the tops of the ridges. The plants very soon appear above the soil, and grow with much vigour, owing to the great depth of the soil, and abundant moisture. Water is given rather profusely once in the week or nine days, even if the weather proves showery; but if the ground be thoroughly drenched by the autumnal rains, no further trouble is necessary. Under this mode of management the plants will remain perfectly green and luxuriant till their blossoms and young seed-vessels are destroyed by frost; and their produce will retain its proper flavour, which is always taken away by the mildew.

"The pea, which I have always planted for autumnal crops, is a very large kind, of which the seeds are much shrivelled, and which grows very high: it is now very common in the shops of London, and my name has, I believe, been generally attached to it. I prefer this variety because it is more saccharine than any other, and retains its flavour better late in the autumn; but it is probable that any other late and tall-growing variety will succeed perfectly well. It is my custom to sow a small quantity every ten days till Midsummer, and I rarely ever fail of having my table well supplied till the end of October, though sometimes a severe frost in the beginning of that month proves fatal to my later crops.

"The mildew of the peach, and of other fruit-trees, probably originates in the same causes as the mildew of the pea, and may be prevented by similar means. When the roots, which penetrate most deeply into the soil, and are consequently best adapted to supply the tree with moisture in the summer, are destroyed by a noxious subsoil, or by excess of moisture during the winter, I have observed the mildew upon many varieties of the peach to become a very formidable enemy. Where, on the contrary, a deep and fertile dry loam permits the roots to extend to their proper depth; and where the situation is not so low as to be too much infested with fogs, I have found little of this disease; and, in a forcing-house, I have found it equally easy, by appropriate management, to introduce or prevent the appearance of it. When I have kept the mould very dry, and the air in the house damp and unchanged, the plants have soon become mildewed; but when the mould has been regularly, and rather abundantly watered, not a vestige of the disease has appeared."

FORSYTH MSS.

LIEUTENANT Paterson returned to England in the summer of 1785, and he seems to have made Montrose his chief residence, for most of his letters, during 1786 and 1787, are dated from that town. During that time he appears to have been suffering from the derangement of his liver, which had attacked him in India. Repose, however, was not agreeable to his tastes, and we find him wandering in the Highlands, and seriously entertaining a proposal made to him by a Mr. Riddle to visit Antigua and North America as his travelling companion. This does not seem to have been accepted, for in 1789, we have already observed, he published his travels in Africa, being at the time of publication in London; and by the end of 1791 he had sailed, as Captain in the 102nd Regiment, to our then newly-established convict settlement of Botany Bay, and we learn from the following letter, dated Norfolk Island, May 1st, 1792, both the date of his arrival, and that he had conveyed with him from England a wife.

W. PATERSON TO MR. FORSYTH.

I must now make a bargain, as there is a prospect of my being in these territories for some years: I shall only correspond with those that will correspond with me. The *Pitt* sails for the East Indies, and, though it is a roundabout way, I take the chance of sending a few lines to all those who I consider are my friends, among them you rank as first. Since my arrival in this place, which was on the 4th of last November, I have been much pulled down with a violent rheumatism, but at present am in pretty good health; had that not been the case I should have written you a very particular account of this small spot. Of Port Jackson I can say nothing, but that most people seem very much dissatisfied, particularly the Marines, and those that are lately returned to England. The soil of this island is very good, but from its formation difficult to cultivate; many parts of it are well watered, and produce Indian corn and wheat; and most kinds of garden vegetables grow remarkably well. The climate is by no means steady, having frequent gales of wind, and no safe anchorage near any part of it. Insects of different sorts are very destructive. Since my recovery I have begun my observations, and I think in the course of a few months (which will be nearly as long as my stay here) I shall complete the whole, which will be curious. The fish, birds, and insects, are numerous, and many, I am sure, new; the strata and formation of the

whole is wonderful; the plants, particularly ferns, are many, and beautiful beyond description; a few that were in tolerable order I have sent to Sir Joseph Banks, and by the time my collection is increased you may expect a share. The time for collecting seeds is now beginning, and by the time a favourable opportunity serves of a ship going direct from this for England, I shall have most that are to be had on the Island; sending by the way of India, particularly by a ship that will remain a year in the country, and in all probability will return to this place, would only be throwing them away. I have only to acquaint you, that though we have not lived in the greatest luxury, we are much better off than our friends at Port Jackson, having a resource in getting both birds and fish, and many times in great abundance, and I should not be sorry were my stay longer than the regular tour of duty will admit of. Mrs. P. is in good health, and joins me in compliments.

GOSSIP.

It is very plainly perceptible that *Crystal Palaces* will soon be a prominent attraction of the chief towns, not only of England, but of the Continent. There is some talk of adopting measures for the erection of one at Southampton; and the prospectus of one certain of erection at Paris is issued. It is to be effected by a company, with a capital of £520,000, to be raised by 130,000 shares of £4 each. A small portion of these will be allotted in England. The concession, for thirty-five years, is granted to Messrs. Ardoin and Co.; and the Government guarantees a minimum dividend of four per cent. The Palace is to embrace all purposes of exhibition, universal as well as national. May such projects prosper; for they are promotive of improvement in all the arts of life.

W. Rayner, Esq., of Uxbridge, has sent to us a letter, which we insert thus prominently, because it enables us to recommend to our readers a perusal of the book he quotes from—the Rev. E. S. Dixon's *The Dovecote and Aviary*; they will find it rich in information and amusement, so much so that we shall recur to it before long.

Mr. Rayner says:—"A paragraph, headed 'Curious Collection of Birds,' having gone the round of the public prints, stating that I had an aviary containing 94 species of *Kingfishers*, I shall feel obliged by your permitting me to set myself right with the public by the following statement:—It appears that Mr. Charles Dickens, in a recent number of his *Household Words*, did me the honour of quoting an extract from a communication I had made to the Rev. Saul Dixon, of Norwich; and published in his work, *The Dovecote and Aviary*, in which I had enumerated 94 species of *Birds* which I had kept in captivity, and amongst that number Kingfishers. I suppose, however, from some typographical error, the daily prints, in quoting this extract, substituted 94 species of *Kingfishers* for that of *Birds*. As many persons may not have seen the work alluded to, I transcribe, for their perusal, the entire paper."

"I send you a list of the birds I have kept in captivity (94 species):—1, Hobby; 2, Merlin; 3, Kestrel; 4, Sparrow Hawk; 5, White Owl; 6, Red-backed Shrike; 7, Spotted Flycatcher; 8, Missel Thrush; 9, Fieldfare; 10, Song Thrush; 11, Redwing; 12, Blackbird; 13, Hedge Accentor; 14, Redbreast; 15, Redstart; 16, Stonechat; 17, Whinchat; 18, Wheatear; 19, Sedgewarbler; 20, Reedwarbler; 21, Nightingale; 22, Black-cap; 23, Garden-warbler; 24, Common Whitethroat; 25, Lesser Whitethroat; 26, Willow-warbler; 27, Chiff-chaff; 28, Golden-crested Regulus; 29, Great Tit; 30, Blue Tit; 31, Cole Tit; 32, Marsh Tit; 33, Long-tailed Tit; 34, Bearded Tit; 35, Pied Wagtail; 36, Grey Wagtail; 37, Yellow Wagtail; 38, Tree Pipit; 39, Meadow Pipit; 40, Skylark; 41, Woodlark; 42, Snow Bunting; 43, Common Bunting; 44, Black-headed Bunting; 45, Yellow Bunting; 46, Cirl Bunting; 47, Chaffinch; 48, Mountain Finch; 49, Tree Sparrow; 50, House Sparrow; 51, Greenfinch; 52, Hawfinch; 53, Goldfinch; 54, Siskin; 55, Common Linnet; 56, Mealy Redpole; 57, Lesser Redpole; 58, Twite; 59, Bullfinch; 60, Common Crossbill; 61, Starling; 62, Jackdaw; 63, Magpie; 64, Jay; 65, Green Woodpecker; 66, Great Spotted Woodpecker; 67, Lesser Spotted Woodpecker; 68, Wryneck; 69, Common Creeper; 70, Wren; 71, Nuthatch; 72, Cuckoo; 73, Kingfisher; 74, Nightjar; 75, Wood Pigeon; 76, Common Turtle; 77, Collared Turtle; 78, Pheasant; 79, Partridge; 80, Quail; 81, Golden Plover; 82, Pee-wit; 83, Heron; 84, Common Snipe; 85, Jack Snipe; 86, Landrail; 87, Waterrail; 88, Moorhen; 89, Little Grebe; 90, Canary; 91, Averdavat; 92, Chinese Grosbeak; 93, Quaker Bird; 94, Java Sparrow.

"With the exception of the Hawks, the whole were kept in an aviary, open to the weather, situated in a northerly direction at the back of my parlour window, and, until I moved into my present habitation, had communication with my parlour—the window then opening into the aviary, in the centre of which stood a stone fountain, the water playing constantly. The class Sylviadæ were separated simply on the score of economy as regards the food, which being generally soft, and consisting of animal matter, would have been devoured by other birds whose food is generally of a far less expensive character. I send you this list to show the number of birds that may be kept together. My aviary measured thirty-three feet long, by ten feet wide, and seventeen feet high, consisting of iron wire, in which aviary trees of the fir tribe, and box, birch, and beech were planted, so that the birds soon made themselves at home in their new habitation, and followed their natural instincts.

"Of the class Sylviadæ, those which I had were for the most part brought up by my children from the nest, so that we had opportunities for watching their natural propensities, untaught by the parent birds. Kingfishers were also brought up and kept by me with the other birds; and, in fact, one nest of Kingfishers was confined, in a separate long cage, with two Hobby Hawks. These Hawks were brought up from the nest by my apprentice, living with me at that time; he also had the care of the Kingfishers, which were fed on dace and gudgeon until they could manage for themselves; but it so happened that he forgot my Kingfishers, while he thought of his own hawks, and I was astonished one day by observing, when he threw into the cage the meat cut up into small pieces, these said Kingfishers dashing down upon the meat; and, so great is the power of instinct, dashing the meat against the perches on which they alighted, as if to kill the imagined prey, and at length bolt it. This diet at last became as palatable to them as fish, upon which they were usually fed; and so tame did they become, that at any time if I held a piece of meat in my fingers, either in the aviary (in which they were afterwards placed), or against the wires outside, the birds would instantly dart at my hand and fly off, with the meat in their bill, to their roosting place, which I observed was always particularized (if I may use the term), each bird having his separate roost. These were generally on boughs, so situated as to have a good view of the fountain, in which I kept a plentiful supply of minnows: they would devour a prodigious quantity of these fish in the day.

"I have observed them take their food in the following manner: attentively watching the approach of their prey, they would suddenly, as if by a paroxysm, close their feathers more tightly to their bodies, and taking a short spring upwards, dash down into the water, which was a foot deep, and at the bottom of which the minnows lay. With unerring aim they would seize their prey, and float on the top of the water for a second, holding the fish across in their beak. On alighting on their favourite branch, they would strike it against the branch, right and left, for a few seconds, until the fish became stunned and quiet, when with a sudden catch the head is turned towards the gullet, and

down it goes. The bird leaves the water without a feather being wetted, and after it has filled its maw, it then makes several dashes into the fountain, uttering a peculiar shrill cry, no doubt of pleasure, as if it were enjoying its bath. From thence it flies to its roost, and then becomes inactive for some quarter of an hour or twenty minutes, its feathers rumpled, and sitting all of a heap, sleepy and stupid. This lasts during digestion, which is very rapid; and as soon as it is completed, the bird is observed to be opening its bill very wide two or three times, and at length ejects a pellet, about an inch long, composed of bones, beautifully matted together, and not unlike a lump of Epsom salts (you see I cannot help comparisons, which are natural to me). This mass is perfectly inodorous, and forms, in the wild state, the nidus for the deposit of their eggs, in the holes to which they continue to resort, year after year, for breeding purposes. Their dejections are highly offensive, and are voided from them with considerable force; and this it is which gives to their nest the horrid and disgusting odour of which naturalists justly complain.

"If you have never brought up young Kingfishers, you would be astonished how large fish they are capable of swallowing. In feeding them I have often given them a bleak or a dace as long as their entire body, including beak and tail; and, in swallowing it, it seemed as if the fish encircled their whole body, while during the feasting they set up a peculiar burring sound, in which the whole nest joins, forming a not unmusical chorus. I have had as many as seven young birds in one nest, all of which I have brought up and kept until the following spring, when battles ensue amongst them, which are kept up incessantly until one only remains the victor, and all the rest have perished in the deadly conflict. I have watched them pursue each other until at last, by one grand dart, the one has transfixed the other to the ground, and flown away triumphant. This I have observed in several broods that I have successfully brought up, but all with the like result, occasioned no doubt by a wisely-ordained instinct, that each might find its own separate location and dependance. The same pugnacious propensity is seen in many tribes of birds that have a voracious appetite, showing that a very wide field is required for their support.

"They obtain their prey evidently from sight alone, and I have often wondered how they have managed when the streams are constantly muddy from the frequent rains, for in confinement, they will not bear starvation. It is said they feed on insects; I have never observed them to do so in captivity, though, as before mentioned, they have resorted to the meat of the Hawk.

"Frequently have I observed them hawking, or rather hovering for several minutes over the fountain, watching for food, and then suddenly dash to the bottom and rise again with the fish, and very seldom indeed miss their aim. *It is said* the fish are dazzled by the brightness of their plumage, but this cannot be; the dazzling portion being above, and the reddish brown beneath, which only could be observed by the fish underneath, if the fish are observers.

"I am here reminded of a large Heron that I kept in the same aviary, which I used to feed on fresh herrings, by throwing into the fountain half-a-dozen or so, which he would in a very short time devour. I then had seven Kingfishers, but I found one morning (I suppose I had not been sufficiently early with the herrings) one of my Kingfishers missing, and nowhere to be found; the next morning another was gone, and in a day or two another. I never suspected the Heron, but while watching him one day I found in his dejection a quantity of feathers undigested, which upon a nearer view I discovered to be those of the King-fishers; so without more ado I packed Mr. Heron off in a hamper to the Zoological Gardens in Regent's Park, where he was left and his character together."

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

ABERDEENSHIRE, Sept. 17. (*Sec.* G. Reid.)
BATH, Sept. 16th. (*Sec.* H. T. St. John Maule, Esq.)
BRIDGEWATER, Sept. 22. (*Secs.*, Mr. J. Leaker and Mr. J. Hayward.)
BURY ST. EDMUNDS, Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
CALEDONIAN (Inverleith Row), Edinburgh, Dec. 2.
HAMPSHIRE, Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
HEXHAM, Sept. 15, 16.
HULL, Sept. 16.
LONDON FLORICULTURAL (Exeter Hall, Strand), Sept. 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
NORTH LONDON, Nov. 23, Chrysanthemum.
NORTHAMPTON, Sept. 27, Dahlia.
OXFORDSHIRE (ROYAL), Sept. 23. (*Secs.*, C. Tawney and W. Undershell, Esqrs.)
SOUTH LONDON (ROYAL), Oct. 14†, Nov. 11†, Dec. 9†, 16.
TURRIFF, Sept. 17.
WHITEHAVEN, Sept. 17, Dahlias.

POULTRY SHOWS.

BIRMINGHAM AND MIDLAND COUNTIES, 14th, 15th, 16th, and 17th December.
BRISTOL AGRICULTURAL, December 7th, 8th, and 9th. (*Sec.* James Marmont.)
CORNWALL (PENZANCE), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)
GREAT YARMOUTH, Sept. 16. (*Sec.* Mr. H. Youell.)
MANCHESTER AND LIVERPOOL, Sept. 23. (*Sec.* Mr. H. White, Warrington.)

† For seedlings only.

ROOT-PRUNING.

So much has been done during later years in the way of dwarfing fruit-trees, that root-pruning, and those other operations which have for their object fruitfulness in a small compass, have been almost laid aside. In occasional rambles through the country, however, we have seen enough to prove that thousands of cases exist, legitimate subjects for the root-pruner. Wherever there is a strong and healthy subject barren through a hitherto invincible coarseness or exuberance of growth, *there* is a fitting subject. We do not say that no other means exist of carrying out the object, but we affirm, that with large trees it is the safest and easiest mode. The first experiment we knew performed was about the year 1817, by a brother of the writer of this article, Mr. P. Errington, then gardener to J. Alcock, Esq. This, it will be seen, was many years before the practice was made patent by means of the gardening press. The late lamented Mr. Loudon was the first to place it well before the public, in his Gardener's Magazine, in the pages of which we used to record our practice more than twenty years since.

Mr. P. Errington's tree, if we remember aright, was a Breda, or Brussels apricot, of extraordinary gross habit, and on which the art of the pruner had been exercised in vain. The success of this root-pruning, we well remember, created no little surprize amongst some of the blue aprons of the day, who were none of your bookish men,—a crooked knife, a blue apron, a headful of traditionary lore, with a few mysteries, being their stock-in-trade.

Since those days, no year has passed without our practising this check upon grossness; and we have thus had, at least, twenty years' experience with almost every subject of the fruit-garden, and, indeed, have not unfrequently carried the experiment into the pleasure-ground. Its mode of action would appear to be of a two-fold character. In the first place, the abstraction of a portion of the roots is incontestably the cause of a loss of

so much vital action, consequently the violent impulse of the sap becomes lessened. In the second place, it is well-known that a constant reciprocity exists between root and branch, and that it is one of the functions of the elaborated sap to descend, and repay the root with interest what it had borrowed. A portion of the roots, then, being removed, less demand is made on the returning fluid, which thereby accumulates in increased degree in the branches, producing an immediate tendency to fruitfulness. This we believe to be the *rationale* of the affair; and if we are wrong, we will thank some friendly hand to set the question right. But in this, as in everything else, extremes must be avoided; there are breakers a-head which, with unskilful piloting, would damage the vessel. As it is but fair to exhibit both sides of the question, we may as well show why extremes are to be avoided.

Insect attacks are very common in the summer succeeding the operation, and sometimes are particularly severe. Those insiduous and obscure enemies, the fungi, are also very apt to follow this operation in some fruits, more especially the apple. One fungus, which appears to be of the genus *Uredo*, we have been exceedingly plagued with. Added to these, some members of that more numerous than respectable family, the Coccus, or Scaly-insect, are exceedingly liable, after a severe root-pruning, to pay a visit; amongst such, the *Aspidiotus ostreæformis* stands in bold relief, as visiting unlucky pears and apples.

Now it may not be uninteresting to consider why it should be so? and although our inferences may be somewhat hypothetical, they will not be without a use, if they only serve to attract a closer attention to a subject that deserves farther examination. Every one has seen, in his time, coarse weeds, thistles, and other rough herbage which had sprung up in pasture, rejected by the cattle, and left to cumber the ground, whilst all around them, perhaps, was browsed almost as close as a bowling-green. If such herbage, however, be cut and left to wither for a few days, stock will readily devour it. It certainly may appear strange to attempt a comparison between the habit of such small insects as the aphides, the coccus family, &c., and such huge animals as the ox, or the horse; but there assuredly is an identity in this point, at least. The insects alluded to attack the fruit-tree with increased vigour when that tree is deficient, or entirely destitute, of an ascending current; and so with stock, as to coarse herbage glutted with moisture. Now, whether it is the crudeness of the sap in a strong subject, or whether the check in question, by causing a loss of some of the essential properties of the plant by evaporation, remains to be proved; perhaps they have a conjoint influence. As another collateral case, bearing on this matter, we may be allowed to point to many indoors plants, which are well known to practical men to be speedily infested with insects if their watering be neglected. The *Thunbergia*, for instance, is speedily covered with the red spider; and *Calceolarias*, *Cinerarias*, &c., with aphides, if watering be neglected when the pot is full of roots. Now, these phenomena appear to meet in a point, and constitute a subject worthy of much consideration by those who can thus devote a leisure hour.

Well, then, we have said enough to put the tyro on his guard; to show that he must use some caution in root-pruning; and that he must be prepared in the returning spring to ward off the attacks of these insects should they commence operations. Indeed, in all such cases, it is far better to use a wash as a preventive to all trees severely operated on, whether by transplanting or root-pruning, for similar results may be expected from both; and every one knows what a prostration of powers is the sure consequence if a transplanted tree be permitted to remain through the first summer in an infested state. We do not make these observations with any idea of restraining the hands, or alarming the minds, of those who have genuine cases requiring root-pruning: by no means; we still have as high an opinion of the practice as we had when it was a new hobby, and when we were frequently accused of riding it too fast.

We may now remark on the character of fruit-trees, in order to point out fitting subjects to the amateur; as also to show in what cases success must be sought in another direction. Whatever the kind, as far as our experience goes, if over-luxuriant and healthy, a tree is a fitting subject for the root-pruner. As to healthiness, surely the most common observer can determine this. The marks in fruit-trees which point to a healthy constitution are such as these:—a clear and healthy bark, with a deposit beneath, producing an impression of what we term fatness in an animal; a liberal amount of young shoots, a well-coloured and well-developed foliage, and a freedom from gum and wounds. These, in the main, are the criteria by which to determine health of constitution. On the other side, there are trees to be met with which produce growth almost as robust as the healthy subject, but generally, fitfully or partially. Some with decaying points; some with whole shoots suddenly dying off—what the country folks term "stricken;" some trees of considerable age wearing out at the extremities, yet producing much spawny breast-shoots out of the old branches, with other awkward appearances. Now, persons must not suppose that root-pruning will mend such cases. We have no *panacea* in gardening—no universal process; and those who publish such, are either undistinguishing or interested parties. For ourselves, we do hope to proceed so cautiously in what we advise, that the advice offered will be equally applicable a century hence.

How to treat those trees which form an exception to the root pruners art must be material for another chapter: in the mean time, let us carry out the subject to its natural close. The amount of roots to be cut away, of course depends on the strength and character of the tree; as, also, on its age. We have operated on old and luxuriant trees so strongly that they never fairly rallied; but this was in our earlier practice, and was the result of inexperience. It is astonishing how much sooner a young tree will regain a luxuriant point than one of some age; but this might be expected. In all cases, if rightly conducted, it may fairly be considered as adding three or four years to the age of a tree. It is an old maxim, that the roots of a tree extend as far as the branches, but such is not precisely the case. In general they extend farther; in some cases considerably so. It is not very easy to convey an idea of the extent to which root-pruning should be carried, without seeing the subject; but in order to approach a correct practice, we may classify fruit trees on the following basis:

1st. Gross or luxuriant young trees.

2nd. Strong growing trees of some age.

3rd. Trees not particularly gross, yet required to be brought to a condition of fruitfulness.

In the first division much liberty may be taken; we should say that, admitting the *utmost* extension of the branches as indicating the whereabout of the extremity of the roots, the circle included in that boundary may have nearly half its roots cut through. In division the second, let us say a third; and in division the third, say a fourth. This is all very arbitrary certainly; but as we cannot give advice from personal inspection, we must even guess at it; and it will be found that the guess will seldom mislead. One point we beg to urge; —that in making the excavation necessary to carry out the root-pruning, the trench be filled up with fresh soil, without manure. If no loamy soil be available, an exchange may be made with the best soil near at hand; perhaps from a kitchen-garden. Our practice is, to dig a circular trench a spade's width all round the tree,

cutting every root, large or small, within the trench. We may resume this subject, in due time, under a broader title, viz:—The improvement of unsatisfactory fruit trees. R. Errington.

NEW BEGONIAS—BOTTOM HEAT FOR TROPICAL BULBS—SEEDLING SIDONIA FRAUDS—EVERGREEN CUTTINGS.

There are so many subjects pressing on me just now that I can only afford space to notice some of them in this fashion. Through the kindness of a correspondent I have had a private view of two beautiful cross *seedling Begonias*, and one of them is the finest flower of that family that I have yet seen. The flowers are larger than those of *Begonia nitida*, and nearly as high-coloured as *B. fuchioides*; and although I have seen the whole of our *Begonias* in bloom, and have bloomed most of them myself, I could not take upon me to say which two produced this cross, yet they give me credit for knowing as much about crosses as most people. One of the parents is *Cinabarina*, and the other parent—a bulbous species—is now lost to England, and was only in the possession of our correspondent who effected the cross, and lost this new one directly afterwards. I hope he will yet be able to reintroduce it from South America. But should it not be met with again in our days, we should not regret, after a cross has been so cleverly got from it, and that, too, one of the very best flowers of the family. The other seedling is a double flower; a cross also from *Cinabarina*. I believe this is the first appearance of a disposition to form double flowers that has been observed in this order, and who knows but this may throw some light on the real affinity of Begoniads; for that is the case in dispute among the most learned to this very day. At any rate, the disposition is evident enough in this case, although the stamens are not wholly turned into leaves, or what a botanist would call petaloid sepals, and the disposition ought certainly to be encouraged, and followed out until we have Begoniads as double as a Guelder rose.

Another correspondent raises the subject of *bottom heat* for plants set out in the open air, and says, "there is no end to the catalogue of what might be grown and done in such a place, if made permanent, with the capability of a temporary glass winter covering. I only instance the successful cultivation and determination of species of a host of *Amaryllids*, and other mystified families." I cannot let this last suggestion pass without adding to it a suggestion or two from the writings of the late much lamented Dr. Herbert, the greatest bulb grower, and the most proficient botanist, among bulbs, that England has yet produced, or is likely to produce in our times; and to the whole I add, "So is it," from the surface of my own experience. "The vigour," said Dr. Herbert, "with which mules of the genus *Crinum*, and many other plants, grow out-of-doors against the front wall of a stove, persuades me that a great variety of plants might, with a little care, be cultivated better in the open ground than under glass, if the border in which they are to grow were flued (heated) under ground.* * * There are many plants which seem to enjoy a cool atmosphere, but will not flower or thrive vigorously without the stimulus of heated earth at the root. * * * I believe the genus *Hedychium*, and many others, would flower perfectly with the assistance of fire in summer, requiring nothing in winter but a covering to throw off the wet. With occasional heat to the flue (bottom heat) during the early summer, and perhaps in severe frost, *Amaryllis*, *Brunsvigia*, *Buphane*, *Nerine*, *Hæmanthus*, and all the allied genera of African bulbs, as well as the South American, would certainly succeed better than with any other treatment. I believe that not only those, but even some of the tropical *Crinums*, would succeed better so than in a stove, and probably many shrubs that might not be expected to live there." (*Amaryllidaceæ*, 402.) Two divisions of a turf-pit, with bottom heat from a rude tank of wood, and a little cast-iron boiler, such as you see sometimes in a back-kitchen, would prove all the bulbs in our dictionary, and also all the tuberous-rooted plants, as *Ginger*, *Hedychium*, &c. The reason for two compartments is, that many bulbs, as the true *Amaryllis*, grow only in winter, while the greater number of the plants thus suggested might be made to rest during the winter, if, indeed, that was not their natural habit, and therefore all they would require would be dryness and exemption from frost in the dark, while those that were green and growing, would need glass for light and protection. All those beautiful plants with variegated leaves, now attracting such general interest that collections of them are exhibited at every plant show round London, might, no doubt, be grown on this plan, and look ten times more beautiful and interesting in their peculiar markings than they now do under our best system of pot culture. Every one of the *Achimenes* would live out any of our winters if planted close to the wall of a stove where pipes or flues passed inside the house. The old *A. coccinea*, and the blue *longiflora*, lived so with me for six years, and the latter flowered every year in September. With a direct bottom heat I have no doubt they all would flower from the middle of July out right in the open air.

I have also been favoured with a truss of the new cross from *Sidonia*, the striped bedding geranium, with this farther account of it—"*Young Sidonia* is somewhat improved in form, and unique in its exquisite colour." I never paid any attention to what is called improved forms in flowers, therefore my authority can carry no weight on that head, but the "exquisite colour" I can vouch for, and the one that gives the nearest idea of it is *Diadematum bicolor*. I am delighted to be made the *Secretary* in matters of crossing, and now I find some difficulty in withstanding the temptation offered by the pollen of new and rare seedlings sent to me. Indeed, I have been under the necessity of taking the pledge to my own conscience, that I shall never take advantage of this trust; and I may as well explain how I might do so, as I know very well that all the gardeners in the world will not take this kind of pledge. Mr. A. B. C., in Edinburgh, raises a fine new seedling, and sends it to D. B., in London, to hear what they think of it in the south. The Londoner, having an eye to business, like a hawk, makes a fresh cut on the footstalk of the flower, and puts it in water; in a few days some more of the buds open, and ripen the pollen dust. While this is getting ready he looks out for an improved variety of the same kind of flower, and on it he dusts the pollen from the Edinburgh flower. The northern grower may have spent ten years, and failed in one hundred experiments, before he obtained that beautiful flower, but he in London takes the advantage of him; and having got into that strain, by merely ripening the pollen from a bud sent him, he will be in the market with an improved race of that flower as soon as the great discoverer himself—perhaps sooner; and being at the head or heart of the trade, he will have the farther advantage of making his new seedlings better, and much sooner and easier, known than if he was in Edinburgh, and all this at the expense, and to the prejudice of him who toiled and spent his brains on the original experiments. It is reported of two nurserymen, long since gone to their account, that one of them raised a new *Magnolia* from American seeds, but not being quite sure that it was really a new one, he sent a man with a piece of it to the other nurseryman, who was a better plantsman, to see what it was, and to hear his opinion on it. This second dealer did not keep confidence with his

friend; but after telling the man some bull-and-mouth story about the seedling *Magnolia*, he grafted the piece on a stalk of his own, and without any farther trouble or expense he had the species (*Glauca*, I believe,) in the market as soon as the man who ought to have had the whole stock in his own possession. The old story of your visitor praising your roses sky high, and asking a nosegay of them to compliment you still higher, and then hastening home to get buds of your very best sorts from the nosegay, is now so well known that nobody heeds it. It is not so, however, about the use that may be made with pollen in these days of sharp practice. It was once thought that all the tricks that could be done with pollen, consisted in pressing orange blossoms against a young lady's face, and then pretending to predict her fortune in marriage, from the quantity of pollen which might stick to the tip of her nose; but now stranger things are done every season, with strange pollen, and some young experimentalists would prefer the chances from a few pollen anthers, than have the run of your seed drawers; and it is just as well that all the world should know this, as well as where the best and cheapest book on gardening is to be had.

Another friend tells me "my tropical border looks handsome, and leafy; the *Maranta* grows but very slowly; *Hedychium coronarium* will flower, but next year I must try my grand hobby—a heated border in the open air."

Another misunderstanding, like that about cutting the top of a rose briar as soon as the shoots were budded on, has arisen between some honest neighbours, readers of THE COTTAGE GARDENER, and philosophy has been ridden hard on both sides of the question, whether it is best to make *cuttings of evergreens* in the autumn, or in the spring. They agreed to refer the case to the decision of THE COTTAGE GARDENER, and here it is. In the first place, it is not fair argument to call *Verbenas*, and such things, *evergreens*, although they are always green under our cultivation. In our language, evergreens mean only evergreen trees and shrubs, and about them there is not the slightest question, among practitioners, about the best time to put in cuttings of all of them that will come from cuttings. From the beginning of August, to the end of September, is, certainly, the best and only time for most of them. Some few, as the *Common Laurel*, may safely be put in much earlier and later in the season; and some, as the *Cotoneaster microphylla*, may be made any day in the whole year, but September is the best month for putting in cuttings of the great bulk of evergreens. A shady border, on the north side of a wall, being the best situation, and a light sandy soil for a bed, with an inch of sand on the top, where it can be had at hand, but it is not essential to success; side-shoots, three or four inches long, pulled off the shoot so as to carry a heel, make the best and safest cuttings; the next best, are the second or Midsummer shoots, with one joint of the first growth at the bottom; this joint being harder than the rest is less liable to damp in the ground, and it is equivalent to "a joint of the last year's wood," as recommended by the old authors. It would fill this page to name the sorts of evergreens that will thus readily come from cuttings; indeed, the list of such as do not root from cuttings is very short. All the kinds of *Arbutus* will not root in this way; seeds and grafting are the ways to increase them. Cuttings of *Hollies*, and *Portugal laurels*, will root but very slowly; from layers is the easiest and shortest way to get them. Some gardeners can root almost all the kinds of *Firs*, *Cedars*, and *Spruces* from cuttings, and some of them cannot root one of them out of a hundred. Some nurserymen put all, or their principal evergreen cuttings, in pots, as thickly as so many Verbena cuttings, then plunge the pots to the rims in beds of sand, with some contrivance over them to carry mats in severe weather, and early in the spring they remove them into close cold pits, and by this treatment they are ready to be parted, and planted out in beds by the end of April. D. BEATON.

WARM CONSERVATORY AS A FLORAL BOUDOIR.

A FORTNIGHT ago an answer was attempted as to several plants being fitted or not fitted for such a conservatory as was designated *warm*. Before that article came out, various other inquiries reached us, the most important and interesting of which was alluded to last week in the correspondents column, but which seems to call for further consideration. The chief inquiry is respecting the suitableness of the climbers named, which has been referred to already, and may receive further allusion; but the most interesting part of all, to our general readers, is contained in the following sentences:—"I must tell you that the building is a very light and elegant structure, divided by glass and folding doors into two parts. The larger of these divisions is to be used as an ordinary conservatory, and is provided with heating apparatus accordingly; but the smaller, which is raised somewhat above the other, is intended for the reception of fine specimen plants when in bloom, from the greenhouse, stove, and orchid-house: from the last of which there will probably be many. Means, therefore, have been provided to ensure a warmer temperature for this part of the house, yet not so warm, but that the ladies may sit there without inconvenience, and enjoy the flowers around them; in fact, a sort of floral boudoir has been contemplated and provided for."

There are several matters here of great importance, and most of which have frequently been impressed upon the attention of our readers.

First: *The dividing of the house by a glass division.* Our friends with even one small house will find this a great advantage.

Secondly: *The securing a more powerful heating medium in the one part than in the other.* This our friends with limited means may always ensure, by making the hottest division next to the boiler or furnace, and giving less air in that division.

Thirdly: *The devoting one division chiefly to growing, and the other chiefly to plants in bloom.* This will be an advantage for both. Bloom may thus be retained by coolness and shade, while growing plants may not be weakened by such a process. Where all has to be done in one house without divisions, the successful gardener must exercise a degree of thoughtfulness and attention which the mere looker on would never imagine.

Fourthly: *The making of this portion a floral* BOUDOIR, *where ladies may sit and enjoy the flowers without inconvenience.*—Whoever this correspondent may be who talks so enthusiastically of an *Ipomœa Learii* covering the roof of his *Indian* orchid-house, and yet comes to THE COTTAGE GARDENER for its opinion, I prophesy that if he carries out his idea successfully, and can use his influence to get such a boudoir for floral specimens generally adopted, gardeners will hail him as one of the best friends they have ever met with, both for saving them labour, and enabling them to exhibit a higher style of excellence in the culture of specimens. What are the hindrances to the appearance of fine single specimens of growth in establishments managed by some of our ablest gardeners?

Chiefly three. First, *there is the bedding-out system in the flower-garden;* and in small places, where much is done that way, every available spot under glass is crammed in winter and spring, that the beds may be as well crammed in summer. Few individual plants can be grown to great perfection in these circumstances.

The flower-garden is the principal thing; and, with limited space, everything else must tend to its adornment. Second, *there is the practice of having the principal rooms* in the mansion supplied with plants in pots in a flowering state. Every good thing, as it comes into bloom, *must* be conveyed there. Upon the maxim, "everything in its place," few things could be more *misplaced* than the generality of hard-wooded plants in such circumstances. As perfectly suitable would it be to shut up a tenderly-reared lady for a week in the humid atmosphere of a plant-stove in summer. In towns, the very possibility of thus getting within reach of the beauties of the vegetable kingdom will bring an interest of its own. In the country, no such necessity exists; and if no attempts are made to harmonise the plants with the style of the room, anything but gracefulness and beauty are the consequence. What can there be in harmony, or yet in pleasing contrast, with a great red earthen pot, and the chaste furnishing of a lady's boudoir? To remedy this evil, I lately saw pots all clothed over with green moss, involving a good deal of labour, and yet the effect was anything but satisfactory—a fine inlaid table, with two or three hillocks of green moss, surmounted by a mass of bloom!! As I have previously shown, a fine effect in such circumstances can only be produced by *hiding* the pots altogether, and using ornamental vases and baskets of a character suitable to the other furniture of the room. But even then the intelligent gardener looks upon such displays with anything but pleasure. If he attends the plants daily himself he may lessen the evil. If the lady becomes curator, or enlists a deputy in the shape of maid or housekeeper, alas! for the poor plants!! The best thing, in such circumstances, is to use soft-wooded things, free-flowering, and not easily injured, or whose injury is of little consequence. A week, or a fortnight, in such places, and under such care, will render the finest hard-wooded plants fit only for the rubbish-heap, or, at least, require a twelve-month of hospital treatment to bring them round again. Third, there is the hindrance of cut flowers. A gardener, well known to fame, along with your humble servant, was examining, not long ago, some fine specimens at an exhibition. "Ah," said he, "these would be of little use to me *now*. I should have to send my knife through them, and cut off and pack up every flower-stalk. Specimens are out of the question; the most flower in least room is what I must aim at. My pots are scarcely ever looked at; bloom, and plenty of it, is everything." Certainly, cut flowers, in moderation, give a cheerful character to a room, and it is much more easy to arrange them tastefully than pots; but where in winter and spring vast quantities are required, a hindrance is thus presented to good specimen growing.

Now our correspondent's *floral boudoir* would tend greatly to remove all these, and if adjoining to, and forming part of, the mansion, as it ought to do, every part and room of the house *would* or *could* have its own *distinctiveness*, which it never can have when plants are scattered promiscuously over all the principal rooms. Few minds can pleasantly and clearly grasp more than one *set* of ideas at the same time. The hotch-potch mingling of objects is apt to give us indefinite and muddling perceptions; no matter the beauty of the objects, let but *discord* and *unfitness* appear, and the beauty is dashed and gone. The most unlettered see and feel this, though they cannot tell you the reason. I have seen fine plants on stair-cases, lobbies, entrance-halls, and in the recesses of rooms, where no direct ray of light could reach them. Could they maintain a healthy existence there? Could any one, who knew what plants needed, look on them with but feelings of pity? But walk into this *boudoir*—every plant stands erect inviting your inspection. You may walk, sit, lounge, knit, read, sing, and, if the ladies are generous, as they generally are, the master may whiff his cigar in chorus, and tender would the plant be that would reproach you with a reproving look. Besides, here you may come and go at pleasure. There is neither the monotony of staring at a few plants in your sitting-room, nor the lassitude and the headaches often promoted by their rich perfume when in confined apartments. A slight moving of the plants would present you every day with a fresh scene. The ability to give the plants just what they needed, the seen and felt *fitness* for a defined object, would lend your plants a charm which they could never possess when *coddled*, *petted*, and, as a consequence, *ruined* in a luxurious drawing-room.

I must now compress by answering the following questions briefly.

First: How can such a *boudoir* suit different plants in bloom, as greenhouse plants, stove plants, and orchids? Perfectly well, if due care is exercised. The place need never be higher in temperature than a common sitting-room, and at night may be much lower. What was said lately of the warm conservatory will here apply. Plants in bloom in the conservatory, in the winter and early spring months, will bloom longer and better for the extra heat, the greatest difficulty will be with hard-wooded plants, such as Heaths and Azaleas after April, they will require to be kept in the shadiest and airiest part. Stove plants and orchids will just be in their element, and will remain in bloom longer than in the house in which it is necessary to grow them; they should have the warmest and closest end, but no need to be so close as to be distressing to the visitors. Air should be so given as to occasion as little draught as possible. Very thin gauze surrounding the house, so as to exclude flies, will render the bloom longer lived. The same thing, and the comfort of the visitor would also be promoted, by shading the roof in summer, or covering it with Hartley's patent rough glass.

Secondly: Will the climbers mentioned for each department flourish and bloom well? Yes, for the greenhouse, except *Bignonia venusta*. The plants would there consist of *Tecoma*, *Tacsonia*, *Mandevilla*, *Zichya*, and *Hardenbergia*. I would mention, that *Tacsonia mollissima* is a rampant grower; *Kennedya Marryatta* would be desirable; and so would such *Passifloras* as *Cærulea*, *Cærulea racemosa*, and *Colvillii*. The warm end climbers are, *Combretum purpureum*, *Ipomœa Learii*, *Tacsonia manicata*, *Bignonia picta*, *Dipladenia crassinoda*, *Passiflora alata*; and to these I may add the *Bignonia venusta*. Will these answer? Yes, if a sacrifice be made; No, if the *boudoir* character is to be maintained during the season. To do the best with *Bignonia*, *Combretum*, and even *Dipladenia* and *Passiflora alata*, a greater and moister heat will be necessary for six or eight weeks in spring, at least, than would suit the place, as a storehouse for blooming plants, or a pleasant and healthy resort as a lady's floral boudoir. That interesting character, I think, could be maintained during the season by substituting such plants as *Passiflora Billottii*, *Passiflora kermesina*, *Stephanotis floribunda*; and, in the coolest part, *Rynchospermum jasminoides*.

Thirdly, What is the best neat-leaved evergreen to clothe permanently two panels, between the pillars, for creepers? I presume these panels are against a wall? Mention was made of the *Hoya*, &c., last week, but second thoughts are often best. For such a position I know of nothing superior to *Ficus Stipulacea*: the leaves are small, neat, and as close as a mat. It will soon cover and cling to a wall; it will do, but not so well, against a trellis; summer and winter it will always be green, and beyond a dash of water now and then, requires no further trouble. R. Fish.

THE HOLLYHOCK.

(*Continued from page* 370.)

THIS stately flower is seen to the best advantage when planted in rows on each side of a walk. In such a situation they form a gay avenue of flowers. Two years ago, we saw an example of this kind of arrangement. It was in the kitchen-gardens at Raby Castle, in the county of Durham, the seat of the Duke of Cleveland. Mr. Roberts, the gardener, said they were so planted to hide the vegetables, and as the family were generally only at home during the autumn they answered the purpose well. This way of arranging the Hollyhock is far better than planting them in solid masses, or in rows across beds, because then the flowers are hid in a great measure, but when in single rows on each side of a long walk, every flower can be seen separately and distinctly.

The plants being thus arranged, with due regard to mixing the colours, the next consideration is securing them from being blown down, or broken off, with the autumnal gales. The usual way is to put a strong, tall stake to each plant, and as the flower-stems advance in height, tying them to the stakes. This method answers very well if due care is taken that the ties do not strangle the stem. To prevent this, they should be examined every now and then; and when the stem seems swollen too much for the tie, cut it in twain, and tie afresh rather loosely.

Should the weather prove dry and hot, it will be necessary to give plenty of water, or the blooms will come small and ill-coloured. Watering will be more effectual if the ground round the plants is mulched. The best kind of mulch is short stable litter in a half-decomposed state. The water, when applied where this mulching is used, does not evaporate so quickly, and by being thus retained, the roots are encouraged to break more into fibres near home, and thus feed the plants more liberally. The water, also, in passing through the litter, carries down into the soil the ammoniacal and other soluble parts, and thus enriches the soil still more than mere water would do. Rain, also, that falls will do the same, so that whether the weather is dry or not, mulching is desirable and useful.

As the flower-stems advance, and the buds begin to appear, it will be necessary, in order to obtain large flowers and space for each to expand, to thin them. Some varieties produce buds very numerously and close together; such must be thinned severely; others produce buds more thinly scattered; these, of course, will not require so much thinning; therefore, this point of culture must be exercised with due discretion. Then, again, when the Hollyhocks are shown in spikes, which is, we think, the proper method, the spikes should be in flower to the very top. Now, in order to manage this, it is necessary to take off the top of each spike three weeks or a month before the day of exhibition; and when they are shown in spikes, the flowers on each should just touch each other; they then form a dense mass, and are exceedingly showy and handsome. Of course, the longer each spike is of fresh perfect flowers, the more valuable it will be for exhibition purposes; and the variety that produces perfect flowers in the greatest number in bloom at once will be the most highly prized.

As the stem advances in height the lower blooms will fade. Unless these are required for seed they should be cut cleanly off. This is too often neglected, and nothing looks more untidy than a long stem of flowers, some quite decayed, others just fading, and a few above them in tolerable perfection. Now this, altogether, is very distressing, we had almost said disgusting, to the eye accustomed to see everything in a flower-garden in a state of good order and neatness. The owner, probably from seeing the flowers gradually decaying one after the another, does not perceive the ill effect, but, probably, in another garden would observe it at once. We were walking through a garden lately, and the owner carried his knife in his hand, and kept constantly cutting off, not only decaying, but also all ill-shaped, or otherwise imperfect flowers. This, he said, was his daily practice; and we think it an example worthy of imitation, not only with Hollyhocks, but also Dahlias, and most other florists' flowers.

The Hollyhock, it is well-known, sends forth, when strong, or two years old, several weaker shoots from each root, besides the strong central one, and such being the case, it becomes a matter of inquiry whether these side-shoots should be cut off, or all, or part of them, be allowed to bloom. The answer to this inquiry will be, that it depends upon the purpose for which the Hollyhocks are grown. If for exhibition in spikes, these side-shoots most decidedly should not be allowed to progress; but if they are grown for mere ornamenting the parterre, the flower-border, or the shrubbery, then the side-shoots should be in moderate numbers retained, because, as the central stem becomes bare of flowers, the side-shoots supply the deficiency. T. APPLEBY.

(*To be continued.*)

JOTTINGS BY THE WAY.

(*Continued from page* 358.)

DURING the progress of our tour in the north, we, of course, did not forget to visit some of the principal nurseries that came across our line of travel; and we may venture to assert, that there is no nursery in any part of Great Britain, which, for hardy shrubs and Coniferæ, surpasses that of *Mr. W. Skirvings, at Walton, near Liverpool.* Perhaps the finest stock of that fine plant, whose praises we have lately, and as we think, justly eulogized, the *Araucaria imbricata*, is to be seen in this nursery. Here they are cultivated by thousands, varying in size from six feet to as many inches, and all cultivated in the open air. The greater part are in pots or tubs; but we were informed that several quarters were planted out, and frequently removed, in order to keep the roots fibry and at home. This is a practice we highly approve of, for when Coniferæ are kept too long in pots, the roots become matted so densely that they are necessarily injured more or less when disentangled at the season of final planting where they are to grow into fine trees.

Mr. Skirving has a specimen of a remarkable shrub, which was new to us. It was named *Limonia laureola.* The leaves are long and rather narrow; the branches are numerous and very green when young; and the flowers are greenish-yellow, something like the flowers of *Pittosporum Tobira*, and are produced on short spikes from the axils of the leaves very profusely. The most remarkable and valuable property of this ornamental plant is its fragrance. The leaves, on being gently rubbed, give out a powerful odour, and the flowers, the foreman assured us, were as highly and as agreeably perfumed as the honeysuckle. The old and original specimen stands in a corner, sheltered from the winds, but never protected in winter. It is only about two feet high, and half as much through, but would, no doubt, grow freely enough if not mutilated frequently, as this has been done, for propagating purposes. We were informed that it came originally from Nepaul, and has stood out several winters without injury. There is a nice little stock of young plants, perhaps one hundred, about a foot high. We saw several of these young plants showing flowers. It has not as yet, as the gardening phrase is, *been let out*, and probably will not be until the stock is much more increased in number.

In the same nursery, *a variety of the Common Laurel* was pointed out to us, under the name of the *Colchian Laurel*. The chief points of difference are the excessive smoothness of the leaves, and the very dark green they assume. We think them, also, longer and narrower; but it is in its hardiness that this variety becomes more interesting and valuable. We were told, that during the winter it keeps that dark bright green, and is then peculiarly superior to the old variety. The stock of *Deodars* here is exceedingly large, as also of *Cryptomeria japonica, Cedar of Lebanon, African Cedar*, and a general collection of Coniferæ, all in excellent health; but the *Araucarias* are the glory of the place. They are worthy of travelling far to see. The nursery is in the highest order of keeping.

Messrs. Cunningham & Co., of Broad Green, near Liverpool. There, also, the *Araucarias* are very numerous, but not so much so as at Walton. Mr. C. is more famous for *Rhododendrons*, almost vying with the Waterers. Many promising seedlings are advancing on to the blooming state, and are likely, if foliage is any criterion, to surpass any as yet known. The owner has been hybridizing for years, his efforts being principally directed to obtain late-flowering varieties; and in order to accomplish this, he uses largely the pollen from the old *R. maximum*, mixing it with the *arborea*, and other fine-foliaged varieties.

Messrs. Davies & Co., of Wavertree, have directed their attention principally to growing greenhouse shrubs, such as Azaleas, Camellias, Heaths, and the best of the New Holland plants. In these, we may justly say, they surpass any country nursery whatever. By country nursery, we mean any that are more than ten miles from London. The plants are healthy, well-stopped, and are just in a right state to form specimens, such as a May, a Cole, or a Green, would choose for that purpose. There are no less than three nurseries in that neighbourhood kept by men of the name of Davies, and they are all brothers, and equally industrious and successful in growing plants. The *Camellia Daviesii* was raised by this company, and is a well-known and excellent variety. We noted that Rhododendrons grow well in these nurseries, but do not form flower-buds, not for the reason Mr. Beaton gave lately, that the presence of a calcareous soil was a preventive of these plants flowering, but because, as we judge, a too rich and cool soil, which keeps them growing too freely and constantly.

T. Appleby.

(*To be continued.*)

A FORCING PIT AND ITS USES.

When the amateur, whose garden establishment has hitherto been homely, is induced to extend it by adding a forcing pit or pits, so as to be able to furnish his table, or contribute to his enjoyment at an untoward season, he is often under some uncertainty which way to proceed, neither do the many gardening publications now existing throw much light on the matter; true, there is no lack of advisers in such cases, but they do not always agree, and opinions diametrically opposite are bad to reconcile, yet not uncommon; one recommending a bark bed and smoke flue; another insists on its being heated by the Polmaise system; while the far greater portion insist on hot-water pipes, as giving out the most steady and lasting heat. Now, as we will suppose the amateur, whose means are not very extensive, wants a pit of some half-a-dozen lights, which he may convert to as useful and varied a purpose as possible, the question then becomes—What sort of a pit is it advisable to build? Of late years the span-roofed structure has been recommended for all purposes, from the princely conservatory down to the small pit for forcing, or other purposes; and though, for most purposes, I like such buildings, yet for winter forcing I prefer the old lean-to, and that with rather a steep pitch. However, as the amateur will expect to derive as much benefit in summer as in winter, we prefer the span-roof for that purpose; and taking the case in all its bearings, we advise him to have it so; as a span-roofed pit, with a door at one end, and a walk up the centre, presents advantages which other forms do not, not the least benefit being the ease with which every thing inside may be seen and examined, but it likewise affords the most space as stowage for plants proportionate to its extent; and as it may be converted into a melon pit in summer, the whole area of glass may be occupied as a trellis for that crop, the central pathway being sunk so as to allow a person passing along without injuring the crop.

The width of such a pit ought not to be less than nine feet inside, and if more, so much the better; ventilation is easily effected by having a wide ridge piece, in which apertures are contrived with sliding doors, otherwise the lights might be made to move up and down in the usual way. We have seen one wherein the lights hung on hinges at top, and thus could be opened any required height at bottom; but this is a dangerous way of admitting air when there is delicate produce inside; the top must, therefore, be made available in some way for the heated air to escape; and what bottom air is necessary to admit had better be by holes opening upon the heating apparatus below the level of leaves of any kind; this, of course, will be regulated by the mode of heating applied, and other circumstances.

As we have recommended the door to be at one end, we will suppose the heating contrivance to be at the other, and for that purpose there is nothing better than hot-water pipes; supposing a simply-constructed boiler, well set at the centre of one end, and pipes leading from it right and left might be suspended to the side walls, on each side, until they reached the opposite end, when by a bend obliquely downwards, they may be made to return again to the boiler, by running underneath the space allotted for the beds on each side of the pathway; this return pipe will be sufficient to heat the stratum above, so as to act as "a bottom heat" to whatever is placed upon it, and, of course, the materials immediately in contact with it ought to be loose and open, in order to admit the diffusion of heat as regularly as possible. To those who do not object to expense, a tank or trough covered with slates would seem to be more serviceable than a single pipe, but the latter will do; and by it we have seen good crops of melons, &c., growing on the bed above.

It will be observed, that these beds are bounded by the outside wall on one side, and by a brick wall on each side of the central pathway on the inside; the pathway, in order to give head room, might be sunk so as to have to descend a step or two at entering, but the side walls of the pit we would advise to be at least three feet high out of the ground, the brick walls forming the margins of the beds and pathway ought to be well built, the top courses either set in cement, or an oaken cap may be substituted, as the jar of heavy pots, and the frequent shifting of materials composing the bed is apt to displace bricks not well set.

Observe, we mean the flow-pipe that hangs on the front wall to be fully exposed, and quite clear of the bed on which plants may be plunged, or melons, &c., growing. This pipe is to give atmospheric heat to the pit, while the other supplies the bottom heat; the one on each side will do for such a structure as we have mentioned; and if the boiler be a right one, and other things favourable, any reasonable amount of heat may be commanded.

It is easy to conjecture how many purposes such a pit may be put to. Winter Cucumbers, Strawberries, and

French Beans, as well as the long lists of bulbs and other flowers which might be sent here to force in winter; while in summer, Melons might be grown to advantage; or the whole pit might form one for pines, in which case it would be required the whole year round; or it might do to winter plants intended for the flower-garden, and when clear weather in March would allow of their being placed in frames, &c., it might be converted into a propagating pit, and eventually have melons for a summer crop; such a structure is sure to be "hard worked," and its utility at all seasons is so apparent, that we unhesitatingly recommend the amateur, if he has one built at all, to have it heated by hot water in the manner described; other modes may be adopted, but we think them less efficient; nevertheless we will, at an early period, explain our views on the common smoke-flue-heated-pit, as well as Polmaise, and the still not-to-be-despised bark bed. J. Robson.

ONE WORD MORE ABOUT BENEFIT CLUBS.

By the Authoress of "My Flowers," &c.

I feel so strongly the advantage of Benefit Societies in rural districts, at least, where alone my observations are made, that for the information of those who cannot meet with the book, I will transcribe a few passages on this subject from the memoir of the Rev. Legh Richmond, written by the Rev. T. S. Grimshawe, which will confirm the fact of their usefulness, and prove that they can and ought to be conducted in a very different way to that in which they are sometimes managed.

After meeting the objections which have been urged against these Societies, as making them less desirable for the poor than Savings Banks, and proving that these objections need not exist, Mr. Grimshawe continues: "The little tradesman, the domestic servant, the bailiff or overseer of a farm, and others in similar circumstances, may find in the banks a safe and profitable repository for their savings; but the labourer, especially if a married man, has no inclination to lay up the small sum he subscribes to a friendly society; and these sums, if deposited at the banks, would seldom meet his necessities in sickness and old age. A long illness would exhaust his deposits, and oblige him to throw himself on his friends, or the parish, for a maintenance. But the Friendly Societies are strictly *Insurance Companies;* and if their funds be regulated by a just rate of insurance, without which, it is granted, no friendly society deserves support—and if they be wisely and properly managed—no institution is better calculated to afford the poor a comfortable and certain independence. Mr. Richmond, who was no mean financier, was fully competent to determine the scale of subscription; and by his judicious arrangements, he prevented the above evils, and effectually secured to the poor the benefit of a Friendly Society. It is greatly to be desired that his plans were universally known, and that all benefit societies were formed or remodelled on similar principles. For the information of the public the following sketch of the Turvey Club is inserted.

"The Friendly Society of Turvey was composed of three divisions. First, *A Club for Children* of both sexes, from seven to sixteen years of age. Each member pays one shilling entrance, and a penny per month; and is allowed, in sickness, eighteen pence per week. From three to four pounds is the yearly expenditure on sick members. The Society has deposited £50 in the Savings' Bank, after twenty years duration. The number of its members has varied from twenty to forty children. At sixteen years of age a member becomes eligible to the senior clubs, and is entitled to receive half the entrance fee required on admission.

"Secondly, *The Club for Women,* confined to persons from seventeen to thirty-five years of age. The entrance fee is five shillings, the monthly subscription one shilling, or one shilling and eightpence, at the option of the members. Those who subscribe the large sum receive six shillings per week in illness; and to the lesser subscriber is paid four shillings weekly. The number of members has varied from thirty to forty. The average payments for the last twenty years have been £20, and the Society has £200 in the Savings' Bank.

"Thirdly, *The Mens' Club,* also comprising two classes. The members of the one pay one shilling, and of the other one shilling and fourpence monthly; and they respectively receive eight shillings and six shillings weekly in sickness. The entrance fee is seven shillings and sixpence. Their annual expenditure has been £35, and their present funds amount to nearly £400. These clubs have about twenty honorary members, who greatly contribute to the opulence and prosperity of the institutions; and their bounty, joined to the subscriptions of a constant succession of young members, Mr. Richmond considered, on the calculation of the Northampton Tables, to be adequate to the demands of the Club. The rules and regulations of the Turvey Club resemble, in most respects, those of other Friendly Societies; but some additions and amendments were made by Mr. Richmond, which are too important to be omitted.

"First,—No persons of immoral character were admitted, or such as were likely to disgrace the Society by habits of drinking, impurity, profane swearing, or notorious crimes.

"Secondly,—A careful superintendance was maintained over the members by Mr. Richmond and the officers of the society. Offenders were admonished; and after these admonitions, if not reclaimed, were excluded from the benefits of the society.

"Thirdly,—The practice of assembling the members of these Societies at public houses, and of spending a portion of their funds in liquor, was prohibited; and their meetings were held in the vestry of the Church, at which Mr. Richmond constantly attended. By this arrangement nearly a fifth part of the funds were saved, and the temptation of the public house avoided. . . . Mr. Richmond's Club, like other similar institutions, kept its anniversary; but in a different way, and with different effect. These feasts are usually held at the public house, and lead to much disorder. The feast of Turvey was not a revel of riot and drunkenness; but a generous hospitality, consistent with Christian principle. Mr. Richmond invited on these occasions, a number of his clerical brethren, and other respectable ladies and gentlemen in the neighbourhood, who usually assembled at Turvey to the number of thirty or forty persons, and with a large concourse of villagers, accompanied the society to Church."

In a letter written by a gentleman present at one of these anniversaries, but which is too long for insertion here, he says "all these Clubs walk in procession to church, and hear a sermon, after which they dine together in the school-room," and again: "without entering into further detail, I would make this general remark—that so much cheerful sobriety, decorum and good feeling were every where visible, as to afford a lively illustration of St. Paul's precept, "using this world as not abusing it."

I wish I could transcribe the whole account given by Mr. Grimshawe. The effects of these religiously-conducted societies had a marked influence upon the morals of the parishioners, and the female character sensibly improved in a way which is very lightly considered among the humbler classes in the present day. In short, they became a means of extensive benefit to the parish in every way.

The plan of the clubs might be altered to suit the circumstances of different localities, but the religious regulations cannot be too strongly drawn up, or too strictly enforced. Upon them depends the blessing, and, according to the lifting up of hearts and hands to God, will good or evil prevail. Nothing earthly can be perfect, but religious Benefit Societies hold out so much temporal and spiritual good, that they seem to be deserving of great attention from those who really seek to promote the comfort of the poor. There should be particular regard shown for the aged, in every case; and, where assistance can be given to them, increased good will arise: for nothing is so sad as the prospects of a labourer if he lives till work is over, and infirmities and helplessness set in. To those who have *means* as well as hearts, I would again urge this interesting subject, and pray them "to remember the poor," and to use every possible exertion to provide for their sickness and old age in a way that keeps up their home enjoyments—independence, self-respect, and, above all, their moral and religious character; and I would entreat my poorer readers to make every effort to meet the monthly demands of these useful

institutions, as an honest and comfortable provision for a time of need; seeking the blessing of Him, who has promised an abundant blessing to *all* who "walk in my statutes, and keep my commandments, and do them."

THE NEW PLAN OF MANAGING SWARMS.

If your readers will turn to page 298 of the current volume (viii.) of The Cottage Gardener, they will find the first notice of a trial of the new plan of managing bees at swarming time, by your correspondent C. R. R. I have lately received from him a very obliging letter, which, jointly with his former communication, I shall make the *text* of my present paper on the general results of the said new system, as they have hitherto come in from various parts of the country. "I wish to inform you," writes C. R. R., "that *the hive* about which I wrote to you before, and which swarmed June 5th [see page 298], immediately after its removal *threw out pints* of drones, both grubs and *perfect* insects, but I have no remembrance of *seeing* any *external* massacre.* You will be glad to hear that this good old hive contains at least 35 lbs. of honey, and I was perfectly astonished to find an 8 lb. straw cap (which I only put on with a view to give the bees room) chock full of honey in perfection, ceiled throughout. The swarm you know the history of." This swarm (which took the place of the old hive, and must therefore have been very large), though put into "*a very large hive*," was evidently too populous for its hive-room, as it actually threw off *two* virgin swarms between the 5th and 17th of July!! And I would observe here, if the old stock, with its much-reduced population, managed to harvest a store of 43 lbs. of honey, how much greater would have been the weight of the swarm had it been supplied with a sufficient space to store honey in! C. R. R. proceeds:—"I treated three *other* hives on your plan with *perfect success*. In each case drones and drone grubs were thrown out, but not to any great extent, as in the first case. I have not my dates by me, but these three last swarmed about June 18th, and one of them was treated, *by chance*, upon your plan of killing the first queen and returning the swarm;† at least, I found the queen dead at the entrance, which no doubt delayed the swarm the nine days you speak of, for it at last came out *enormous;* notwithstanding all that, I put it on the stand of the old hive, and the old hive has managed to pick up 20 lbs. clear, or as near as can be. This swarm has done wonders; it *has* 38 lbs. of honey, and it has given me about 30 lbs." Of course we can readily believe C. R. R. when he says, "the season here (Yorkshire, North Riding) has been good. I have, from an apiary of twelve hives, taken full 180 lbs. of top honey (from boxes, caps, &c.), besides an *amazing quantity* of other sorts, and I can honestly say that I have not a hive with less than 20 lbs. of winter store, I perhaps might truly say 25 lbs., in it." Now this report of a first trial of the new system tells its own tale; it needs little comment. Plenty of virgin honey—no casts—old stocks, in good condition, presided over by youthful queens—these promised results have been fulfilled to the letter. To the above account I will add the report of a trial of the new system by a plain *cottager*, sent to me from Cornwall by the clergyman of the parish, a brother apiarian, who himself, so late as the 3rd of July, wrote to me in despair "of the grievous state" of his bees, assuring me that *his* groanings were not a whit behind my own. "Before I left home," he says (*i.e.* about the 5th of August), "I got the cottager, who has been managing one of his stocks after your system, to weigh the old stock and the swarm. The swarm, which was a very large one, issued from an ordinary cottage hive so late as *Sunday the 11th of July*. It was put into a straw hive capable of containing full six-and-a-half gallons of wheat, and very soon after being hived was placed on the stand which the parent hive had occupied, the parent hive itself being taken to a stand from five to six feet distant, I forget which. The old stock appeared nearly depopulated, but the workers, next day, if not the same day, set about expelling the drones. However, it gradually gained strength, and on the 5th of August (*i.e.* in twenty-five days), its *contents* weighed 25 lbs. It did not swarm a second time. The swarm in the six-and-a-half-gallon-hive having worked its comb down to the floor-board, had a very small hive placed on its top, and the contents of these hives weighed, on the 5th instant, 45 lbs. My cottage friend is highly delighted with his success. He would have managed a second swarm on your plan, but it flew off. He has now three stocks, all of which he will reserve until another spring, to be managed on your improved system." "There can be no doubt of the plan being an admirable one," as my friend observes, "if in the great majority of cases it proves anything like as successful and profitable as the above." That it should *sometimes* fail must be expected. B. B. gives an instance of such failure at page 346 (vol. viii.).* Bees are not amenable to rule, and swarming ofttimes takes place, in certain seasons especially, when the young royal brood is in a very backward condition. To remove the old stock under such circumstances would probably be fatal. To avoid such an evil I have already suggested the propriety of examining the condition of the royal brood after the swarm has issued and been put on the old stand; if none of the royal cells are ceiled over, it were well to treat the swarm on the old plan. And yet an instance occurred to myself this very summer, in which an old stock (whose swarm of May 15th was treated according to my plan) had no *ceiled* royal cell, in fact the royal grubs, of which there were two, were neither of them above five or six days old from the laying of the egg! and yet this old stock to-day (Sept. 4th) I found to weigh 28 lbs. of *contents;* its swarm, having an old queen, did not do so well, for on plundering it to-day very little more than 20 lbs. of honey was found in it, though it was put into a hive filled with comb. We are not quite certain if it swarmed or not, but if it did *not* the old queen must have died, and the bees have reared a young one in her place, which would account for the small store of honey, small even for the *bad* season in this locality, for it was a good-sized swarm at its issue on the 15th of May.—A Country Curate.

* I would here notice the remarks on this subject lately made by "Investigator." The large stock of which I spoke, and which threw out an *immense quantity* of drones, chiefly grubs and young full-fledged insects, immediately after the issue of a monster *natural* swarm (June 1st, 1851), treated in the old fashioned way, was *well supplied* with honey, both old and new, but it did not swarm again. I have, however, since found it is by no means an uncommon occurrence to witness the massacre of drones in the early season. Nutt speaks of it, and other writers; and I heard of a similar occurrence which happened to a cottager's hive this summer, just after the issue of a natural swarm, which was treated in the usual way. That, however, which on the old plan was an exception to the ordinary rule, seems as if it would be *the rule* under the new system. May it not have something to do with a foresight on the bees' part that they will not need to *swarm again?* for it is curious, that in these instances they chiefly destroy the *younger* drones, those, in fact, which would be required for the *younger queens!*

† See "English Bee-Keeper," pages 34—37.

* I would request him, and any one else who has given the new system a trial, to publish the results thereof, whether favourable or otherwise. They will be conferring a benefit on apiarian science.

COCHIN-CHINAS *v.* SPANISH AND DORKINGS.

I am a gardener as well as poultry-keeper, and pay great attention to both; consequently read The Cottage Gardener with great interest. I will now allude to poultry, having during my time kept different kinds. "Gallus" speaks of the *Dorking* fowls as excellent nurses and table fowls, and I fully agree with him, but I do not know whether I do not prefer the *Cochin-China* fowls. The rich, delicious eggs, and the number they lay, as well as their gentle, quiet habits, and being good setters, and excellent on the table as well, I think I give them the preference to the Dorking, but I do not mean you to understand that I consider them better eating. Of the Cochin-China fowls I have two kinds; one grouse-coloured, with long-partially covered legs; and the other canary and buff-coloured; with legs as short as the Dorking fowl, and covered with a great quantity of feathers, and with a body as square built. "Gallus," in his paper, says the Cochin-China fowls are such large eaters, but are good layers, *and though his have laid more eggs than the Spanish, it has not been in proportion, which he says have, since February, laid six eggs a week each; therefore, if the Cochin-China fowls have beat them, it could have been by only one a week.* I have kept *Spanish* and *Cochin-China* fowls together, and consider them well matched in eating; and eat they must, to provide such a drain upon the system. They are greedy eaters, but if you watch, the Dorking will

keep up the game much longer; and the question is, when the maw is full, which of the three kinds has eaten the most? My grouse-coloured fowls have rather a long body, and more tail than the other kind, which they invariably carry to one side; their eggs are larger and darker than the others, but the chickens are not so hardy. We had a couple for dinner the last week of August, which weighed, without the feathers, four pounds each; they were hatched the beginning of April, with others, two of which have now (Sept. 1st) laid regularly for ten days. The Durham Vicar's accounts and mine, as to profits, would agree; and the prices here of poultry and eggs are similar. In my opinion, the profit is with the farmer's wife, who feeds on the refuse corn, and to the miller and brewer. I have seen noticed in your paper an account of Richardson's book, which speaks of Cochin-China fowls laying two or three eggs a day. This I should consider an impossibility. I have had an excellent breed of *Dorking* fowls, for many years crossing them with the best breeds I could procure. Although I have sent away my cocks and killed off all my hens, except ten, I am still doubtful whether I may not retain them; but I will give *all* a fair trial. I have kept *Polands*, but they are too delicate; besides, they get their beautiful crests so besmeared with food that I seldom could keep any fit to be seen. I am very fortunate in rearing *Turkeys*, and am going to try entirely white ones, but my fear is, a want of constitution in them; but I am assured they are as strong as the dark ones. G. S., *Notts.*

BURY AND RADCLIFFE POULTRY SHOW.

This was held at Radcliffe (Lancashire) on the 3rd instant. The *Cochin-Chinas* were a very good gathering; the *Dorkings* very indifferent; the *Spanish* first-rate; and the *Geese* and *Ducks* generally very superior. Great praise is due to Mr. Cross, the secretary, for his excellent arrangements, and for the accommodation provided for the poultry. The only suggestion we would offer for the future, is that prizes should be also given for *Chickens*, for at this time of the year the best full-grown birds are usually moulting.

The judges were S. Hutt, Esq., of York, and M. Delaunay, Esq., Crumpsall, Manchester.

LIST OF PRIZES.

Spanish—Four competitors—Cock and 2 Hens. 1st. Captain W. Hornby, R.N., Knowsley, Prescot. 2nd. John R. Kay, Esq., Bass Lane, Bury. Age 1 year.

Dorking—Two competitors—Cock and 2 Hens. 1st. John R. Kay, Esq., Bass Lane, Bury. Age 2 years. 2nd. Mr. James Tongue, Farnworth, near Bolton. Age 5 months.

Cochin-China—Twelve competitors—Best Cock and 2 Hens. 1st. Mr. George C. Adkins, Edgbaston, near Birmingham. Age 2 years. 2nd. Captain W. Hornby, R.N., Knowsley, Prescot. Age, cock 4 months and 13 days, hens 1 year and 3 months.

Malay. No award.

Game Fowl—One pen only—Best Cock and 2 Hens. Mr. D. Henderson, Whittle. Age 1 year and 2 months.

Golden Pheasant. None exhibited.

Silver Pheasant—Two competitors—Best Cock and 2 Hens. 1st. Mr. D. Leeming, Halifax. Age 2 years and 4 months. 2nd. Mr. Silas Dorning, Little Wardley, Worsley. Age about 2 years.

Chitteprat—Five competitors—Best Cock and 2 Hens. 1st. Mr. David Henderson, Whittle. Age 1 year and 3 months. 2nd. Mr. John Taylor, Kearsley, near Bolton. Age 4 months.

Poland Fowl—any variety. Two competitors—Best Cock and 2 Hens. 1st. Mr. George C. Adkins, Edgbaston, near Birmingham, "White-crested black Polands." Age about 16 months. 2nd. Mr. John Kay Farnworth, Alderley Edge, Cheshire, "Black Polands."

Any other distinct breed—Four competitors—Best Cock and 2 Hens. 1st. Mr. George C. Adkins, Edgbaston, near Birmingham, "Chinese Bantams." Age 2 years. 2nd. Mr. Dennis Lowe, Kearsley, near Bolton, "Yellow creels." Age 5 months.

Bantams: Gold or Silver-laced—Seven competitors—Best Cock and 2 Hens. 1st. Captain W. Hornby, R.N., Knowsley, Prescot, "Gold-laced." 2nd. Mr. George C. Adkins, Edgbaston, near Birmingham, "Golden-laced." Age about 2 years.

Bantams: White, Black, or any other variety. None shewn.

Geese: of any breed—Seven competitors—Best Gander and 1 Goose. 1st. Captain W. Hornby, R.N., Knowsley, Prescot, "Toulouse geese." 2nd. Mr. Robert Hampson, Crow Trees, Radcliffe. Age, gander 3 years, goose 4 years.

Ducks: of any breed—Fifteen competitors—Best Drake and 2 Ducks. 1st. Wm. Ashton, Esq., the Oaklands, near Bury, "Aylesbury Ducks." Age 4 months. 2nd. Captain W. Hornby, R.N., Knowsley, Prescot. "Aylesbury."

Turkeys: of any breed. One pen. Best Cock and 1 Hen. 1st. Mr. J. K. Farnworth, Alderley Edge, Cheshire, "Norfolk." Age 2 years.

TO CORRESPONDENTS.

Pine Growing (*A Practical Man*).—As for twenty or thirty lines settling so broad a question, if such could be done, why write books? As you are in a hurry, we will try our hand at brief answers to your queries, but let it be understood that such is the present position of horticulture, anything but stationary, that any one of the answers may speedily prove debatable ground. "*How many houses?*" That depends whether you plant out, or in pots; each system has its advocates. "*How many plants to keep up a succession of one hundred?*" Two hundred, if in pots; one hundred fruiters, and the other successions. "*How to be heated, bottom and round?*" We say hot-water piping. "*Where to be bought?*" At the cheapest and nearest market, providing they are *clean;* generally through the medium of a nurseryman. "*Price to be given?*" Dependant on quality and kind; strong fruiters, perhaps, about 4s. to 5s.; successions, 1s. 6d. to 2s. 6d. "*What earth to plant in?*" Good loam, adding half rotten manure. "*What sorts do best?*" Queens, Providences, and Envilles, are most generally grown as a commercial spec. "*What disease attacks each stage?*" None that we know of. "*What heat required?*" Dependant on time of year; summer 80° to 90°; winter 55° to 60°; other periods intermediate. "*What light required?*" All that a British sky affords. "*What care at night?*" None besides securing the necessary temperature. "*What aspect best?*" South. "*How many can one man manage?*" If nothing else to do, some hundreds. "*What wages fair?*" Money, or equivalents equal to a guinea per week. "*What time required to grow in?*" From the sucker to the ripening, nearly two years. "*How to destroy insects?*" You must not hear tell of insects on yours; recipes for the unfortunate will be given as the case arises. "*Where to buy tan, if needful?*" No tan for us; if you will have it, such depends on the nearest tan-yard, of course. "*Will guano assist them?*" They are grown in first-rate style by men who care not a button about the Lobos Islands. "*Do they like dry or damp heat?*" They abhor a dry heat. "*To have a hundred fruiting pines, how many to be kept in the other stages?*" As before observed, one hundred fruiters, and about one hundred and twenty strong successions, would be a fair start for a beginner; he would soon have suckers to hand, which would keep up succession without purchase. One thing we had almost forgotten—pray do not grow from imported fruit, if you do, you may, perhaps, rue it. Your houses may stand either north and south, or east and west, and yet succeed well. As to glass, if north and south the ground plan, we should say, British sheet; if east and west, rough plate will be found useful.—R. E.

Fumigating Bees.—We publish here a note from *Twickenham*, with a comment by *A Country Curate.* "On looking over some old stores the other day, I found some pieces of pastiles, used, I believe, for sick rooms, it struck me it would answer for fumigating bees. I bruised half a stick, placed it in a tobacco-pipe, took two or three whiffs, got it well alight, and applied it to the hole on the top of a ten-inch glass, on a doubling-board, containing comb and 300 or more of old bees; in one minute they were on the floor-board, and in two more, I took them in my hands, like so many beans, they were about an hour before they all recovered. I have tried it three times since in the same glass, and have not destroyed a single bee with it. I tried it again this morning, in consequence of what I read this and last week by the 'Country Curate,' who calls fuming a filthy process. I have found nothing of the kind—no dirt, no filth—the comb, glass, and floor-board as clean as before. Fuming ought, I think, to be done from the top of the hive, and not from the bottom. If the hive or glass does not fit close, some luting or a wet cloth should be fixed tight round the bottom, leaving only a small crevice for the escape of the pure air, which is in part driven down by your forcing the smoke in at the top. As the fumes descend, the bees follow to the floor-board, and do not attempt to ascend again; if you fume from the bottom they work up. I have enclosed you three pieces, and should like the 'Country Curate' to try it, and report progress." "I am obliged to your correspondent for the pastile he has sent me; when I am a little more at leisure, I will endeavour to make trial of the new narcotic. Where may it be had? His plan of fuming at the *top of the hive* is a clever thought, and if it is only generally effective in its operation, it promises to remove much of the partial success of the present mode of fuming, and to avoid a good deal of the *filthiness* thereof. Will your correspondent try its influence on a *full hive* of bees, from the top, and let us know its result?"—A Country Curate.

Flower-garden Plan (*S. S.*).—Yes; "the mere forms of the beds" will do on paper, but let us have their positions also, just a mere scroll of all the beds as they stand. Number them all, and keep a copy of the plan to read the answers from. You will bear in mind that we do not select "the gayest and most varied plants," or any selections whatever for any one, because tastes differ as much as the colour of the flowers. Like a salesman in a large warehouse, we show off all wares for the flower-garden to the best advantage; selections we must leave to our customers to make for themselves, unless, indeed, any of them come to the counter; then, after a little gossip, we find no difficulty in making a private arrangement, and are sometimes able to throw out suggestions for a plan. We can always say with confidence if a plan is rightly filled up if we see the list.

Climber over a Cellar Area (*E. S. E.*).—Your gardener's suggestions of placing a box on the grating to grow a climber in, seems to us the only and last hope in such a case.

Shrubland Rose Petunia (*Semper Vigilans*).—Mr. Appleby can send you this Petunia quite true. The flower is a delicate rose colour, with a pure white eye. There was a bed of it at Kew Gardens, but we have seen quite a different Petunia given out from Kew under this name this spring, through some mistake in the tallies. We do not know who supplies the rose *John Baptist.*

Ants on Cinerarias (*Amateur*).—Do not attempt to destroy the ants, but be grateful to them, as you would to the Monitory Lizard, for, like him, they tell you that mischief is at hand. Be assured that the Green-fly is upon your Cinerarias, and it is after that pest that the ants come. Fumigate your plants with tobacco-smoke.

Exporting Auriculas, Pansies, and Polyanthuses (*A Subscriber*).—As these will have to be a month in confinement whilst conveying them to America, we recommend you to plant them quite close together, in a stout, iron-bound box, and to have the top glazed, the glass being puttied in so as to be air-tight. Let the glass be sunk an

inch down within the sides of the box, and a piece of galvinized iron netting be nailed over to preserve the glass. This will make a rough but effective Wardian case.

ADVERTISEMENTS OF YELLOW AND BLACK PELARGONIUMS.—*Simplex* says:—"Allow me to warn others as inexperienced as myself against these advertisements, and of other 'African bulbs.' I regret to say that I laid out £1, and never was greater rubbish bought. The greater part either never showed signs of life, or, after a sickly attempt, died. One, 'a black pelargonium!' in flower to-day, is a mere weed, that is only deserving of the rubbish-heap." *Ipomœa* and *Convolvulus* are so nearly allied, and so nearly resemble each other, that they can be only distinguished by some slight botanical differences. The best-flavoured *large strawberry* that we know is *Myatt's Cinquefoil*. Mr. Myatt's direction is Deptford, Kent. *Tan* next week.

CAST-IRON GREENHOUSE (*A. Beaumont*).—Enquire of Messrs. Weeks and Co., King's-Road Nursery, Chelsea.

LEAVES OF STRAWBERRIES (*I. W. K.*)—Usually no more barbarous or injurious practice can be adopted than mowing off the leaves of strawberries. If repeated several times in quick succession it would kill them. The only circumstances under which it possibly can be advantageous is when strawberries are over-vigorous, producing an excess of leaves and little fruit. When strawberries are of a healthy and productive vigour, let only the dead and dying leaves be removed when the bed is dressed in the autumn. Let them be cut off with a sharp knife, for the rough tearing of them off, too often practised, loosens and injures the roots of the plants.

POTATO PLANTING (*Ibid*).—We do not advocate planting the sets less deep than six or seven inches below the surface. When we spoke of tubers just below the surface, we meant those new tubers which will always form in the spring near the surface. We shall have more to say on potato culture shortly. We grow *peach-trees* on a galvanized-iron trellis, against an old wall, fastening the branches to the trellis by broad strips of thin sheet lead, which allow of the ends being twisted together.

BLUE BOTTLE FLIES (*Pansiana*).—These will attack any fruit at this time of the year, if the skin of the fruit is cracked by rain or other cause.

PRESERVING PANSIES FROM WIRE-WORMS.—*Pansiana* says:—"Finding my Pansies going through the ravages of the wire-worm, I surrounded each plant with a layer of soot, about a quarter-of-an-inch deep, and then gave them a good soaking with water. This appears to have had the desired effect, as I have not lost any since by these vermin. This may be useful to some of your correspondents who grow Pansies, and, perhaps, if tried upon Carnations or Pinks, might have the same effect."

SIZE OF SUNFLOWER (*J. L. B.*).—We have not seen the common annual Sunflower higher than about 8 feet; but Gerarde, a very trustworthy authority, in his "Herbal," published in 1596, says—"In one summer, being sown in April, it hath risen up to the height of fourteen feet in my garden, where one flower was in weight three pounds and two ounces, and cross the flower by measure sixteen inches broad." He adds, "in Spain, and other hot regions, a plant sown and nourished up from seed hath been seen to attain to the height of twenty-four feet in one year."

NAME OF FRUIT (*Verax*).—*Kirke's Plum*. First brought into notice about thirty years ago, by Mr. Kirke, of Brompton. It is thought to be of foreign origin.

NAMES OF PLANTS (*Mrs. Taylor*).—The yellow flower is *Tagetes lucida*, and the white one *Eupatorium corymbosum*. (*I. H. O.*).—No. 2. *Funkia subcordata*. No. 3. An *Ornithogalum*, probably *prasinum*, but we cannot from a single blosson be certain of this, nor of No. 1.

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Advertisements.

WEEKLY CALENDAR.

M D	W D	SEPTEMBER 23—29, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
23	TH	Herald Moth seen.	30.114 — 30.106	73—54	N.E.	08	50 a. 5	55 a. 5	morn.	10	7 47	267
24	F	Beech nuts fall.	30.118 — 29.939	66—47	N.E.	—	51	52	1 3	11	8 8	268
25	S	Wild Honeysuckle's second flowers.	29.815 — 29.647	64—42	S.W.	06	53	50	2 14	12	8 28	269
26	SUN	16 SUNDAY AFTER TRINITY.	29.694 — 29.606	56—43	S.W.	—	55	48	3 25	13	8 49	270
27	M	Birch turns yellow.	29.764 — 29.625	57—39	W.	01	56	46	4 33	14	9 9	271
28	TU	Woodlark sings.	29.790 — 29.665	62—30	N.W.	—	58	43	rises.	☺	9 29	272
29	W	MICHAELMAS DAY.	29.705 — 29.601	60—39	S.	14	VI	41	6 a 38	16	9 49	273

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 65.3° and 45.8° respectively. The greatest heat, 82°, occurred on the 25th in 1842; and the lowest cold, 24°, on the 27th in 1828. During the period 85 days were fine, and on 90 rain fell.

LONG-TAILED CENTRANTHUS.

(*Centranthus Macrosiphon.*)

THIS is rather a gay little hardy annual, but not slender. The flowers are ruby-pink under a bright sun. Like all the Valerianworts, to which it belongs, the flowers are collected together into heads, at the end of all the shoots. It is a native of the high lands of Grenada, whence it was sent to France a few years since. The Horticultural Society introduced it from France, and distributed quantities of it to the fellows. An ordinary observer would take it for a dwarf Valerian, but the construction of the flower is a little different, which is expressed by the name *Centranthus*, or Spur-flower, or *Kentranthus*, as it was first named by Necker, a German botanist; but Decandolle's more euphonious name, *Centranthus*, has been preferred. *Stem* erect, stout, branched, hollow, milky-green; *lower leaves* short-stalked, egg-shaped, obscurely toothed; *upper leaves* stalkless, sharply toothed, and lobed; *flowers* in corymb-like close clusters; tube of the corolla three times the length of the fruit. It belongs to *Monandria Digynia* of the Linnæan system.—B. J.

Culture and Propagation.—The usual treatment of hardy annuals will do for this *Centranthus*. It may be sown in the open borders any time in April or May, and allowed to flower where it is sown. Or it may be transplanted very easily from a seed-bed to flower anywhere else. I had a little bed of it last year, but I did not think much of it, and it did not flower above six weeks or so; but I have seen it used about London to very good purpose, and in that way I fully recommend it. Sow it in August, or early in September, either in the open ground, or in pots, and carry it through the winter in cold frames, like Common Stocks, and it comes in early in April, or sooner, for flowering in the conservatory, or in rooms. A single plant of it, in a very small pot, just coming into flower, might be turned out, and the ball put in a glass of water on the mantel-piece, and it would last full three weeks in beauty. Like the *Nemophilas*, it would be a good thing to transplant into beds where Crocuses, or Hyacinths, or Tulips are to flower; such plants keep the bulb beds gay until their leaves ripen, then bulbs, plants, and all are removed, the beds are dug and watered, and are then ready for another crop. D. BEATON.

THE potato is one of the greatest blessings bestowed upon mankind; for, next to rice, it affords sustenance to more human beings than any other gift of God. It has been impiously called the curse and the Upas of Ireland; but *the abuse* of the blessing is the curse, and it is as unjust thus to condemn it, as it would be to anathematize iron, because man has formed from it the rack and the thumbscrew, as well as the ploughshare, the loom, and the compass.

The potato is a blessing so long as it is only a subsidiary food of a people; adopted by them, as in England, as an aid, or resource, when other better food is deficient, and as a diluent, or corrective of grosser animal nutriment. No man in a mild or torrid climate can live healthily upon a preponderating animal diet; and it is for the purposes of giving the quantity required for appeasing the sensation of hunger that such food as potatoes and rice are so beneficial.

In Ireland, this cheap produce has become the chief, the staple, food of the inhabitants; and, as the staple food of a people regulates the price of wages paid for their labour, wages have become so low in that country, that when a dearth of potatoes occurs, the day's earnings are not sufficient to purchase a day's sustenance of dearer food. But why has the potato become the staple food of Ireland?—because the priest and the middle man, in days not yet passed, encourage the division and subdivision of paltry holdings into others still more and more miserably small. This subdivision of farms, says Mr. Macculloch, has been both a cause and a consequence of the use of the potato as a principal article of food. A small farmer, or even proprietor, with five, ten, or fifteen acres of land, cannot afford to keep himself and family on bread and beef. He is compelled to resort to inferior food; and as the potato affords the greatest quantity of nourishment from a given extent of ground, to that he naturally resorts; and this facility of obtaining support tempts to a further division of the

holding. Such have been the consequences of the extreme subdivision of landed property in Ireland; and it has been fostered by the priest and the middleman, because each fraction of a holding is productive of further fees and increased rentals.

Where, as in England and Scotland, the potato ground is only the poor man's aid, not his all, it is indeed a blessing; and it is told in these few words of an allotment tenant: "There are but few days in the year, sir, on which we cannot get a meal's help from it." Most assuredly, therefore, do we think that the descendants of Raleigh might be as proud of a sprig of the potato foliage on their coat armour, as those of Appel de Kapoesang are of its tubers, with which the Austrian heralds have charged their shields.*

There is every reason to believe that Chili, and especially the neighbourhood of Quito, is the native country of the potato. It is there now found in a wild state; its slightly bitter tubers have been thence imported of late years; and cultivation has gradually raised from those tubers plants now producing crops of excellent potatoes. We learn, also, from Peter Cieca and Molina, that when the Spanish navigators first visited Chili and Peru, their inhabitants cultivated and ate a tuberous-rooted plant, which they called *papas*. Molina says there are two kinds: the wild, having small bitter tubers, and the other, improved by culture, so as to have tubers grateful to the palate.†

The Spaniards imported the potato into Spain, where it was called *battata*, from the resemblance the tubers bore to those of the sweet potato (*Convolvulus battata*), and from thence it was communicated to Italy. This was at the close of the 15th, or early in the 16th century; yet at the latter period, the potato was so little known, even to botanists, that Lobel, in his "*Plantarum seu Stirpium Historia*," published at Antwerp in 1576, has no mention of it, though he describes and figures the sweet potato. Gerarde, in England, however, and Caspar Bauhine, at Basil, both in the year 1526, gave notices of their acquaintance with it, yet still evidently as a rarity.

Caspar Bauhine, in his "*Phytopinax seu enumeratio Plantarum*," published at Basil in 1596, first bestowed upon it the botanical names it still retains—*Solanum tuberosum;* and his description is also the first occurring that is full as well as accurate. Some of the particulars intimate a knowledge of the consequences of certain modes of treatment that we have been lately, and, it would seem, mistakenly, considering of recent discovery. The root, he says, is round, but not completely so, of a tawny or dark reddish colour, and is usually dug out of the earth in the winter, being replanted in the spring. "Nevertheless, if left in the soil it will again vegetate in the spring. Very often the root becomes rotten after it has put forth the stem." It was known as the Spanish, or Indian pappar, and endured without difficulty the climate of Europe, for he had seen it in the open gardens of some physicians in the Netherlands.

In his "*Prodromus*," published in 1671, Bauhine gives a drawing of the potato, showing the tubers as both round and oblong, and enters still more fully into its description. He says it was first brought from Virginia to England, was thence exported to France, and from the latter country was distributed to other parts of Europe. In Virginia it is called *openawek*, as is stated by Peter Cieca, and in Gomara's History of the Indies. About Quito it was called *papas*, and thence it was sometimes called the Indian, or Spanish papas; and in Germany *grublingbaum*, that is, the tuber-bearing shrub. Bauhine says that he first delineated it in 1590, from a specimen in the garden of Dr. Scholtz, who probably received it from Clusius.

Peter de Sivry, Lord of Walhain, had the potato, in 1587, from a friend of the pope's legate in Flanders. It was brought from Italy under the name of *tortufoli*, a name applied to all underground tubers by the Italians. The Lord of Walhain gave two of the tubers to Clusius in 1588. (*Clusius Historia Plant.*)

Our countryman, Gerarde, in 1596, specifies the potato under the title of *Papus hyspanicus*, in the catalogue of plants cultivated by him in his garden at Chelsea.* In his "*Herball*," published the year following, he describes the potato accurately.† After particularizing the sweet potato, which he calls "Sisarum Peruvianum, sine Batata Hispanarum, Potatus or Potatoes," he proceeds to the consideration of the common potato, under the title of "Potatoes of Virginia. Battata Virginiana sive Virginianorum et Pappus." The woodcut and the description demonstrate that the plant he had before him was our common potato; and he proceeds to observe, that "it groweth naturally in America, where it was discovered, as reporteth C. Clusius; since which time I have received roots thereof from Virginia, otherwise called Norembega, which grow and prosper in my garden as in their own native country."‡ After stating the time of its blooming, &c., Gerarde adds, "The Indians call it papus (meaning the roots), by which name the common potatoes (sweet) are known to them. We have the name proper unto it mentioned in the title, because it hath not only the shape and proportion of potatoes, but also the pleasant taste and virtues of the same; so we may call it, in English, potatoes of America or Virginia. Being likewise a food, as also a meat for pleasure, either roasted in the embers, or boiled, and eaten with oil,

* De Kapoesang was the first successful cultivator of the potato in Austria.

† P. Cieca's *Chronicle*, published in 1553. Molina's *Hist. of Chili.* The Spaniards first visited South America in the year 1492, and there is no rational doubt of this being the earliest period in which the potato became known to Europeans. Clusius and some others have surmised that the *arachidna* described by Theophrastus was the same plant, although the suggestion does not appear with a single reason to sustain it; but it seems to us that the arachidna is identical with the aracidna of Pliny (*Hist. lib.* xxi. *cap.* 20), and this appears to have been synonymous with our truffle. Pliny says it was a root having no leaf, or stem, or any other part above ground. Cortucius had a similarly groundless opinion as to the identity of the potato with the *picnocomus* of Dioscorides. This certainly was not the potato, for it is described as growing wild in southern Europe in stony places, as having acrid leaves, and seeds narcotic, producing heavy, disturbed sleep.

* Catalogus arborum fruticum, etc. in horto, J. Gerardi, civis et chirurgi Londinensis nascentium. London. 1596.

† Herball, or General Hist. of Plants. London. 1597.

‡ At the end of the preface is a portrait of Gerarde; and it deserves notice, that he holds in his hand a sprig of the potato—leaves, flowers, and fruit—as if he considered it one of the most remarkable novelties of his time.

vinegar, and pepper, or dressed any other way by the hand of some cunning in cookery."

In 1633, "Thomas Johnson, citizen and apothecary," published a new edition of Gerarde's Herbal, and it is very apparent that the potato had then improved under cultivation, for the tubers there represented by him are large, and in form resembling the Julys now cultivated; whereas those portrayed by Gerarde are small and globular, like those produced by the plant in its wild state.

The positive testimony of Gerarde proves that the potato was forwarded to him from Virginia; and how they reached that province of North America will be made to appear probable by the suggestions of Humboldt, which we will presently mention. Gerarde, we may conclude, received the tubers from some of the settlers in Virginia, who emigrated thither about twelve years previously, in 1584, under a patent granted by Queen Elizabeth to Sir Walter Raleigh. And thus much is certain, that, in 1693, Sir Robert Southwell, President of the Royal Society, communicated to that learned body the fact that his grandfather first cultivated the potato in Ireland, and that he obtained it from Raleigh.* Tradition states, further, that Sir Walter himself also had the root planted on his estate near Youghall, in the south of Ireland; and that he gave them to his gardener as a desirable fruit from America. When the berries were ripe in September, the gardener brought them to his master, with the inquiry of disappointment, "Sir, are these the fine American fruit?" Sir Walter, either really or pretendingly ignorant of the potato's habit, desired them to be dug up as weeds, and thrown away; but in doing this the tubers were revealed, and found to be the available produce.†

Humboldt rationally concludes that the Virginian colonists obtained the potato from the Spanish settlements, for it is quite clear that it is not a native of Virginia, nor even of intervening Mexico, and that it was cultivated in Spain and Italy before it was made known in England from Virginia.

Although the potato was known to English botanists in 1596, yet horticulture was too ignorantly practised in this country to permit its rapid introduction among our cultivated crops. In 1619, potatoes were here a desired, yet expensive luxury; for in that year of James the First's reign a small dish of them, provided for his queen's table, cost one shilling per lb., when money was at least twice as valuable as it is now.

We have some more most interesting information on this subject, but must postpone it until next week.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

BURY ST. EDMUNDS, Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
CALEDONIAN (Inverleith Row), Edinburgh, Dec. 2.
HAMPSHIRE, Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
LONDON FLORICULTURAL (Exeter Hall, Strand), Sept. 28, Oct. 12†, Nov. 9†, 23, Dec. 14†.
NORTH LONDON, Nov. 23, Chrysanthemum.
NORTHAMPTON, Sept. 27, Dahlia.
OXFORDSHIRE (ROYAL), Sept. 23. (*Secs.*, C. Tawney and W. Undershell, Esqrs.)
SOUTH LONDON (ROYAL), Oct. 14†, Nov. 11†, Dec. 9†, 16.

POULTRY SHOWS.

BIRMINGHAM AND MIDLAND COUNTIES, 14th, 15th, 16th, and 17th December.
BRISTOL AGRICULTURAL, December 7th, 8th, and 9th. (*Sec.* James Marmont.)
CORNWALL (PENZANCE), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)
DORCHESTER, Nov. 18th. (*Sec.*, Mr. G. J. Andrews, Dorchester.)
MANCHESTER AND LIVERPOOL, Sept. 23. (*Sec.* Mr. H. White, Warrington.)

† For seedlings only.

LATE, OR WINTER GRAPES.

OF all other periods, this is one of the most important as to our present subject. Summer grapes will ripen by the natural course of the season, provided the root is in good condition; and they will also keep, if bipeds and wasps be kept at a respectful distance. Not so those for the Christmas desert, or for running into the month of February. During the months of July, August, and some few others, we enjoy such a high degree of solar light, on the average, that if a negligent cultivator omit dressing his vines, and they should "wander as free as the wind on the mountain," no great harm accrues; the grapes ripen in defiance of neglect, and of over-prim and spruce snubbing as well: this putting venerable Dame Nature into swaddling clothes, is, in many cases, more of a custom than a principle. We were at certain gardens lately—gardens of great notoriety, and, indeed, in some cases, deservedly so—where, among specimens of good gardening, mingled with some of an indifferent character, we stumbled on what are termed vineries. Stripping naked had here been practised with a vengeance. To use a nautical phrase, "they were lying-to under their bare poles." Now, how can any man in his senses imagine that a vine can beneficially be thus stripped of its foliage? When we advocate a judicious stopping, we do hope that our readers will not imagine that an interdict is laid upon growth.

Thus much understood, we now point to one of the first proceedings with regard to late grapes—the removing all useless spray. All points which have rambled since the last stopping may be pinched back to any well-developed leaf, and, where any way crowded, totally removed. There exists a double reason for this: first, that such, as observed in a former paper, take from the system what they cannot repay; and secondly, that all possible solar light must henceforth be permitted to fall freely on the principal, or first formed leaves, both in order to invigorate the bud for the succeeding year, and to perfect the fruit. Let it not, however, be understood, that it is recommended to cut off a single leaf of the older class; this is a most injurious procedure, and can only be justified by extraordinary circumstances. It is generally understood by late good grape cultivators, that

* MS. Minutes of the Royal Soc. in loco, Dec. 13, 1693.

† It has been stated, but upon no good authority, that potatoes were cultivated in Ireland long before the time of Sir Walter Raleigh; and Sir John Hawkins, in 1565, and Sir F. Drake, a few years later, have been named as the probable first importers. If they introduced any such tubers, they were probably those of the sweet potato (*Convolvulus batata*); but as the author who makes the suggestion intimates that a passage in Bede's writings can only apply to the potato, we may very justly conclude that both surmises are equally worthy of attention.—(*Holt's Kings of Eng.*, iii.)

the berries should be thoroughly coloured before September closes. We, however, had a capital late house last year, the berries beautifully coloured, and they had not completed their ripening until the middle of October. These kept as well as any we ever knew until the middle of February The kinds were *Hambro'*, and that invaluable late grape, the *West's St. Peter's*. It is not, however, expedient to recommend such a course to those not used to late grape culture. Indeed, there is little doubt that grapes thoroughly ripened before the end of September will both keep longer, and certainly possess higher flavour than at any later period. Grapes ripened too soon will shrivel somewhat early; those ripened too late will rot instead of shrivelling, providing damp air be permitted to lodge about them.

And now, as to atmospheric management from hence through the winter. In the first place, to give winter grapes a good chance, not a single plant, in a growing state, should be kept in the house. This will sound harsh doctrine to our worthy friend Fish, who so jocularly worked up a case of imagined exclusiveness against Messrs. The-other-departmental-writers, at page 335. We will, however, deprecate his ire, and try to administer a little consolation, by giving him an equivalent for the loss of house-room for his chrysanthemums, geraniums, &c. It so happens, that in most places, where they can afford to devote a house to late grapes, there is a host of things requiring decided rest. We may here point to the bulbous tribes, gesneraceous plants, succulents, &c., &c., and, indeed, several others, which, by being weeded out from other structures, will make a considerable void, leading to a most useful re-arrangement and economy of space, besides being the very condition of climate required. If needs be, we would even admit large border specimens of geraniums, slipped into pots with balls, and kept dry, half their heads being removed. This is enough to console any one who fears an encroachment on his system. It is almost needless to observe, that a total absence of water inside is the point to aim at; in fact, the interior may be made to approximate a cool study, or sitting-room, as nearly as possible—a free, dry atmosphere. A low temperature will, of course, preserve the grapes longer than a high one; but there is a medium to be observed in this matter. It is astonishing what a high temperature the *Muscat* section will bear before they shrivel; we should say 10° more than a *Hambro'*. If we were to point to a desirable temperature, on the average, for the three classes of grapes most desirable for winter, we should say for *Hambro'* 50°, *West's St. Peter's* 55°, and the *Muscat* section 60°. Of course, we are not requiring our readers, in defiance of atmospheric changes outside, to force these conditions; by no means. We do hold, however, that it is desirable, on this side Christmas, to keep the sap in motion in the shoots; so as to preserve the leaves fresh as long as possible; and this cannot be done if the temperature be allowed to sink lower than 45°.

These things premised, the question is, how to carry them out. Fires must be had frequent resort to, especially after October is out; their strength and frequency depending on the condition of the atmosphere without. Dampness of air is much more to be dreaded than low temperature. In all dull and drizzly states of the air the fires should be liberal, especially through the day, with but moderate ventilation, and that chiefly at the back, to let foul and damp air escape. The house may be closed about four P.M., the fire having been reduced an hour previously, and a temperature of about 40° sustained through the night, if sinking to 35° perhaps all the better. We would still, however, retain an inch or two of *back* air, for egress of moist air excited from the floors, together with leaf perspiration, &c., little matters, which however unperceived by the feelings, are of some importance. When the weather is lively, and a free motion of air prevails, the most liberal degree of ventilation should be allowed, especially in the earlier part of the day; this will disperse damp or mildew from every crevice, providing a fire is kept up. We have known persons, in November or December, put their fires out because the day was so fine: this is nonsense; such is the very time to keep up a lively fire, bringing into play, by rarefaction, the smoking damps from every corner. On such days, the front sashes or ventilators may be set wide open, and if there is a lively wind, so much the better. Night fires are most to be eschewed: here lies the greatest danger. As before observed, a temperature of about 40° being secured, all beyond has a tendency to excite damps.

And now, as to damp or rot in the berry: this must be assiduously guarded against; but guard how we will, it will occasionally occur, especially through December. The scissors should be run over every branch once a week, removing every wounded berry. If drip occurs, it will be well to place a little pot-saucer here and there to catch it; if the firing and ventilation, however, is rightly managed, and a good roof, drip from condensed vapour will be scarcely known. Houses properly constructed, and thus managed, may be made to keep grapes fresh until the middle of March. Thus it is possible to have grapes every day in the year. R. ERRINGTON.

TRANSPLANTING ROSES, &c. IN AUTUMN—FORMING STANDARD RHODODENDRONS.

ON reading the letter of a correspondent, this morning, about pruning and removing roses that were budded this season, I exclaimed, "better late than never," and here I make the adage a text for a few words about Roses. "Will you kindly inform me, through THE COTTAGE GARDENER, whether the following course of acting will be correct: I purpose moving my roses about the middle of November, and, about a fortnight before removal, cutting away close to the stem all unused shoots, and shortening those on which the bud has taken to about half their length. I understand these to be the directions given on such and such a work on the rose, for replanting with a dormant bud, but should be glad to be informed if they are consistant with the present state of gardening science." I was also asked if the said book was "really to be trusted." Now, the first remark which occurred to me, on reading this letter, was this, that I would as soon be asked if Johnny Jolly, the gardener, over the way, and his wife were honest or good-looking, as to answer about the correctness of this or that book, treating on the same subjects as my own book. Without waiting to read the book in question, however, and trusting to poor humanity for the decision, I say at once, that if the rest of the directions in this book are of a piece with this quoted example from it, I have not the least hesitation in saying at once, that the book is not "consistant with the present state of gardening science." Nevertheless, on the principle of "better late than never," it is a better plan to prune such roses, and roses in all other stages of existence, a fortnight before they are removed for transplanting, than at any other period of the season in which they are removed. But practice, backed by "the present science of gardening," has proved that not only roses, but all other deciduous trees and shrubs, which are to be removed in November, or before Christmas, ought to be pruned by the end of September, or as early in October as possible; and the reason for this has often been given in these very pages, and here it is once more, for a good tale is never the worse for being twice told. When a rose, or any other plant, is to be removed, it is impossible to do so without injuring more or less of the roots, and to balance the reciprocity question between

roots and branches, science tells us to cut away the latter in proportion as the roots are injured, so that next season the fewer buds that remain may break as strongly and healthily as they would have done had the tree not been removed at all. Then, if you cut one-half of a quick hedge at the end of September, and put off cutting the remainder of the hedge to next March, although every plant in the hedge may now be of equal strength, you will find, next June, that the young shoots of one-half of this hedge are nearly twice as strong as those on the other half; the parts cut in September throwing up the strongest growth. Mr. Errington tells us, that vines pruned as soon as the leaves fade in the autumn show the same result if compared with others not pruned till March. Indeed, all this is so well known and appreciated by our best gardeners, that when they want to reduce the pride or strength of a healthy young tree, or bush, they defer the pruning of it until it is almost in leaf in the spring; and on the other hand, to strengthen the growth of a woody plant, they prune it the moment the leaves have done digesting in the autumn; therefore, if it is found necessary to prune a plant early in the autumn, in order to increase its vigour next season, when left without being disturbed, how much more so if it is to be crippled through the operation of planting; hence arises the necessity of pruning such plants as are to be soon removed, before others of the same kind that are to be left as they are. The reason why plants, thus early pruned in the autumn, resist the accidents which may happen in the operation of transplanting, is thus explained and easily accounted for. The earth being so much warmer in the autumn than the air, the roots collect nourishing food for some time after the fading and fall of the leaf, and when one-half or two-thirds, and sometimes much more of the shoots are cut off in pruning, the remaining portion receive a double or triple portion of this nourishment, the buds swell up and get prominent before the winter sets in, and at the next opening, or growth, they spring forth with redoubled vigour.

Now, to say that the first fortnight in November is the very best time in the year to transplant roses, and most other deciduous things, would not be far from the truth; but to assert that the same time is the best for filling up buds in order to get them strong enough after transplanting a rose, or to say that a fortnight, at that late season, is sufficient for making the best of the buds for the next start, is to fly in the face of "the present state of gardening science;" no matter who propounds it. It is only through sheer necessity that science or practice would allow of a rose tree, that was only budded last July, to be transplanted next November; but necessity has no laws, and such roses are removed every year, and our correspondent's plan of "cutting away close to the stem all unbudded shoots, and shortening those on which the bud has taken to about half their length," or, rather to within six inches of the inserted bud, is eminently in accordance with the present state of gardening science. If he would take advice, and do this pruning one month sooner than a certain book tells him to do, his success will be more complete. It is not safe to cut roses before the end of September, because the lower buds might grow out afterwards with a mild October, and if they did, the whole experiment would be deranged; but there are a great number of plants that would feel the benefit of being pruned as early as the 1st of September,—the *Camellia*, for instance. Suppose we have a Camellia that has been languishing these three or four years past, and is now crowned with flower-buds on the top of every little shoot; the *ancient* state of gardening science would advise the thinning of these buds to relieve the plant—so far, so good; but the *modern* state of this science goes a step farther, being made bold by the example of practice, and advises the removal, by pruning, of two-thirds of the length of one-half of the shoots of such a Camellia; that half should be the weakest shoots; before next April or May, when the stronger shoots would be pruned after flowering, the buds on the September-cut shoots would be so much swollen and stronger than they otherwise would be, that the autumn-pruning not only would give a general impulse to the health and strength of the plant, but the growth from the weak shoots would be as strong, if not stronger, than that from the more healthy ones that were not cut until the buds were on the point of opening. It is the same thing with pot *Rhododendrons*, under similar circumstances, and with *Azaleas* of all grades.

Speaking of *Rhododendrons*, reminds me of the second way I said that they could be made standards of. The first way, epitomised, is this:—cut down a bush late in April, or early in May, and select the strongest shoot from the stool for your standard, and follow it up to the height you want. The second way is, perhaps, the best in the long run, but takes a long time to turn out a fair saleable plant. It begins in the seed-bed, or rather in the first bed where the seedlings are transplanted; or, let us say, that a fine batch of some favourite seedlings, either from crossed or no-crossed flowers, are ready, and are transplanted from the seed-pans, in some sheltered corner, at the end of April. On their first growth that summer, it is easily seen that some of them are of stronger constitution than the rest, and now is the time to fix on the strongest of them for the future standards, unless they are very thickly planted. Seedling *Rhododendrons*, at this stage, throw up a leading central shoot, and a tier of side-shoots to the bargain, and the first move is to go over the beds, and to rub off the side-shoots as fast as they appear; this encourages the leader to grow still stronger. All that season, and for the next three or four years, the same process must be repeated, or until the one centre shoot is up standard high, when the central bud on it must be rubbed off, and the next tier or two of buds will be allowed to branch out to form the ground work of the head. When I first heard of standard *Rhododendrons*, I went to work on a bed of seedlings exactly as here described, and I found the plan to answer perfectly. But there is another, and an easier plan, which I suppose must be the one more generally adopted in large nurseries, but it is not quite so good; it is to let those stronger seedlings have their own way all through each summer, and in the winter to look over them, and cut away all side-shoots. Thus men's time is saved from watching their progress through the growing season; but then time must be lost, at least one season out of the three or four necessary to complete the full standard of many of the shoots, as the allowing side-shoots must hinder the progress of the leader more or less every season. Besides, a side-shoot cannot well be cut off at the winter-pruning, without either leaving a portion of it next the main stem, or displacing a leaf or two, if it is cut quite close, and either of these we call unworkman like. The little stumps must be cut some time or other, leaving a scar or wound to heal over at the expense of the leader; or, if leaves are removed at any time, until they are ripe; for if left to fall off of themselves the same effect is visible on the slower progress of the standard.

Besides these, there is a third, but a rough-ready mode of getting a standard now and then with much less trouble. A bed of Rhododendrons is planted thickly, and, as too often happens, the plants are allowed to crowd on each other until the whole mass is a confused heap of evergreens, which can only flower on the top; the side-branches, which give the grace and charms of a fine Rhododendron-bush, are so smothered, that they get quite bare of leaves at last; at this stage, it will be seen, that those plants with a stronger constitution than

the rest will start off by the central shoots, leaving the bottom mass and the bare shoots to fight it out as best they can; then comes the pruner, who is bent on having his standards at the least trouble and expense; he cuts off all the smothered and half-dead branches from those plants which aspire to be higher in the world, leaving them as mere ghosts for a time; but his ghostship is not much noticed after all, for the common mass of plants below hide the naked stems, and after another season or two's growth, out comes a full-blown standard, covered with scars, it is true; but time heals all things. D. Beaton.

PROPAGATION OF COMMON GREENHOUSE AND COLD PIT PLANTS.

Who has not admired the combination of wisdom and satire in the well-known story of the old man and his ass, who, in attempting to please all, satisfied none, and lost his ass into the bargain. Purveyors for the public, be their material what it may, are often placed in a similar predicament. Fortunate, indeed, are they, if they never have to grumble over the loss of friends and the ruffling of their placid tempers at one and the same time. The first of these contingencies our little work may expect at times to meet; the second personal evil we are too case-hardened greatly to experience. And yet it would be more pleasant could we give satisfaction to every one. I think it might be possible to succeed *even* better than we do, did our supporters attend more to three things: First, never to grudge a postage-stamp to the editor for detailing a clear, but short, statement of their wants. Secondly, to get into the habit of generalising ideas, so that what may be gained in one department, may be brought to bear on another; and Thirdly, to bear in mind that what is of no moment to them may be all-important to others. Personal profit may thus be secured in unison with the general advantage. There is a tendency in all long-lived periodicals, especially if professional, to fly too high for the *simplicities*. The teacher ever finds himself most at home with the more advanced scholars; but he would soon have an empty school were the boys in the alphabet neglected. I would wish alike to retain the old, and entice fresh subscribers. To effect this, I have lately had evidence, written, oral, and ocular, that simple matters must not be neglected, even should we descend to repetition, if we would wish to obtain, and retain, young beginners. Says one, "I expected your Cottage Gardener would just suit me; but it is all *Greek*. I know nothing of these fine names that seem to engross all the attention." Writes another, "I got a loan of some numbers a twelve-month ago, but I have looked in vain for such information since; not a word as to how I am to manage these *loves* of geraniums, calceolarias, &c." "Just oblige me with stepping this way a few minutes," whispers a third. "There, what do you think of these—Cottage Gardener treatment, aint they?" and attention is directed to strawberry plants in pots, standing on a shady border, the soil as loose about them as if it had been gently trundled in, and the buds almost as near the bottom of the pot as the surface. Great results were expected in April and May, and a dim shadow of the reality only crept over our friend's vision when assured he would not get rich if he had a guinea per ounce for his fruit. Now a fourth enquires, "What can be the matter with my cuttings? my man Friday says that they have been treated exactly as directed some twelve months ago, in spring, putting them in a slight hot-bed; but salvias, petunias, &c., have got something more than ricketty legs; calceolarias have gone, with the exception of a few green leaves on the top; the points even of scarlet geraniums are rotting; verbenas are so lanky that they will not bear their own weight;" and the wonderful mystery turned out to be, that these evils took place in an atmosphere, in autumn, that Messrs. Robson and Errington would not have found fault with in March for cucumbers. A fifth having no pits or frames; wishes to save the grapes in the *one* house as long as possible, and grumbles because the grapes will damp when the floor is kept damp with cuttings; and wonders, again, when he finds scarlet geraniums striking freely in boxes on his stage and plenty of air on, that no drenchings will enable him to keep calceolarias alive in such circumstances.

These are only types of classes who good-naturedly hint that *now* they do not get the information they want, and so peculiarly singular does each consider his own circumstances to be, that a score of papers would not treat their cases, even though these should be repetitions of all that has been said and done on such matters. This I cannot think of doing for the present, but will content myself with alluding to one general rule in propagating, and to its application in a few distinctive cases.

The cause, then, of many failures, and of much extra, useless labour, is the treating of *cuttings* inautumn the same as would be necessary in spring. I am not surprised that inexperienced friends fall into this error. It seems very simple *now*, but I floundered for years in similar mistakes myself. It is no libel to say that many gardeners are not yet above the prejudice. How common is it to hear them talking of getting up a bed for their cuttings in autumn, while, if taken off moderately *early*, any thing in the shape of extra heat does more harm than good; I speak of plants in the mass, not of those having their distinctive periods of growth. In spring, growth is actively progressing and arresting that growth suddenly by cold would paralyse the vitality of the cutting. A little extra heat to what it had before, will give an additional stimulus to upward and downward growth. A little bottom-heat acts then on the base of the cutting, encouraging the protrusion of roots, without unduly lengthening, and thus weakening the upper part before roots are formed. But in the autumn the case is different; mere extension is giving place to consolidation; heat and light are naturally decreasing, instead of augmenting. Extra heat in spring *assists* natural progression; extra heat in autumn *counteracts* the repose to which the plant is tending. Nature will be assisted, she will not be forced. Hence, cuttings with attenuated tops, and bases with tissues, rent and rotting, if such had been kept cool, and time given, might every one have rooted and been healthy. There is only one deviation allowable when propagating *late* in autumn; a *slight* bottom-heat may be presented to the base of the cutting, but even then the tops must be kept cool. If cuttings of the generality of our balcony, basket, and flower-bed-plants are taken *early* in autumn, the cold pit or frame will beat the hot-bed; but in general you must wait a considerable period for the rooting process. Many, with succulent stems, will succeed nicely in the open air. One thing more should be attended to. Many will not stand sunshine, but then shade should be moderate. I prefer *subdued* light, instead of shading, by putting cuttings deep in a pit exposed to the south; or turning a frame, with its high side to the south; or using a north border for many small things. Let us now glance at a few distinctive groups.

First: *Scarlet Geraniums*, &c.—Nice stubby, firm-based side-shoots of these will strike best of all in the open air, on a south border, from the middle of July to the first week of September. After that period they will be better for having a glass light thrown over them to keep off extra wet and cold; from two-and-a-half to four inches is a good size for a cutting. Remove a few of the small leaves at the base, cut clean across where you

slipped the cutting from the main shoot, let the base dry for a day or two, damping and shading the top in the meantime, and then insert them firmly in rows. If you can get a little road-drift to put them in all the better. If you want to see them look green you may shade a little; but this is of no consequence, for though they flag and hang their heads, there is so much juice in them that they will be sure to recover.

Florist and *Fancy Pelargoniums* may be treated in the same way until the middle of August, provided the stems are well ripened, after that they would be better for some protection. Those who have little room, and mean to keep their young scarlet gereniums in large pots and boxes through the winter, may put them in now against a south wall, if nothing better; under a light, if come-at-able. These last will require little water before being housed. A frequent dewing of the foliage in bright weather is better than soaking the soil. Plants thus raised from cuttings as late as the end of September, will bloom better than those struck in spring, but not so well as those struck in August, and potted off; and these again will be beaten by those old plants saved by any of the modes detailed last season.

The other things to be mentioned will require to be kept under glass, or glazed calico, so that they be close and moist. A light sandy soil will be necessary for them all, whether planted in beds, or in pots, or boxes, the latter being well-drained. Road-drift makes a capital chief ingredient; about a quarter of leaf-mould will improve it, provided it is sweet, and free from worms; and then, for all small tender things, a surfacing of silver-sand and charcoal-dust, taking care in every instance that the cuttings are put in *firm*, and not deep. In the

Second Group.—I would place *Salvias*, *Senecios*, *Cupheas*, *Pentstemons*, &c. These, with the exception of *Senecios*, will stand out, with a little protection; but unless they are taken up, divided, and fresh planted in spring, they will not bloom so well as young plants raised from cuttings in August and September. The first to be potted off, the second to remain in the cutting pots or boxes in winter. Small, side, stiff shoots are best, from one to two inches in length. The most succulent, as the *Senecio*, should have the least water. All will do best in a cold frame, or pit, kept close, and not too shaded. If put in very late this month, the pots might require a very little bottom-heat about the middle of October. *Petunias* require similar cool treatment; side-shoots should be sought after, from one to two-and-a-half inches in length. I often use the points, but only when I cannot get side-shoots. If *Heliotropes* are put in later than the first week in September they will require a very gentle heat at the bottom. If earlier, like the others, a cold place, fully two feet from the glass, will preseve them in the healthiest condition—air being given, of course, as growth proceeds, and a little given at all times during night.

Third Group.—*Anagallis*, *Lobelias*, of the small kinds. The base of the plants must be examined, to get short, stubby pieces; and these will quickly strike in a similar place, provided for a short time, at first, a hand-light is placed over them under the sash. Long pieces from the stem of the plant will be almost sure to disappoint you. The time lost in picking your cuttings is, after all, time and labour saved.

Fourth Group.—*Calceolarias*. If you want cuttings of the shrubby kinds early, you must sacrifice part of the blooming shoots early. If you allow the plants to bloom freely, you will seldom get good cuttings until the middle of September. These should be stubby side-shoots, from one-and-a-half to three inches in length, getting firm at their base. Nipping off a few of the lower leaves, and cutting off any loose piece of bark and wood, where severed from the stem, is all the making they require. Here, again, the choosing of the nice stubby cutting is three parts of success. Planted in pots, or boxes, and placed in a cold pit, or merely pricked out in the prepared compost, under a hand-light, or sashes, on a north border, success will be equally sure, if you give them *time;* but you must not grumble if cold nights come before they all root. Such plants will stand rougher treatment afterwards than those enervated by heat.

Fifth.—One word more as to *Verbenas*. To these the same rules apply; only there is a little difficulty in the cuttings, as any part will strike freely; but here, too, small side-shoots make the best plants. I frequently prick them out in a bed under glass, to save the time of preparing pots; and, in such circumstances, have the inclination of the glass to the north, to save shading. Those who are scarce of glass for this purpose, may lay the points of shoots, at a joint, in little pots, filled with fresh soil, fastening them with a pebble. They will soon fill the pots with roots, when the plants may be separated, by first cutting half through, and then altogether, after a short interval. R. FISH.

CONIFERÆ.

(*Continued from page* 371.)

CEPHALOTAXUS DRUPACEA.—This genus has been formed out of *Taxus*, by Dr. Sieboldt, the Japan traveller, and Zuccarini, author of the *Flora Japonica*. The generic name is from *Kephale*, a head, and *Taxus*, the yew, referring to the habit of the trees. The leaves of all the species are remarkably large, and have a silvery, milky-green hue on the under side. The *C. drupacea* (berry-bearing), is a native of the Mountains of Japan, where it forms a low tree, some twenty feet high; very similar, excepting in its leaves, to the Irish yew. It is a handsome species, and perfectly hardy, though, as yet, very scarce.

C. FORTUNII, so named by Dr. Hooker, in compliment to Mr. Fortune, the zealous and successful botanical collector, who has enriched our gardens with numerous interesting and beautiful Coniferæ, as well as many other flowering shrubs from China, and other eastern countries. The average height of this fine tree is from 40 feet to 60 feet. It was discovered by Mr. F. in the northern parts of China, and is, therefore, likely to prove quite hardy in this country. The leaves are dark green, and fully three inches long, and are arranged in rows on the stem. We saw several scores of this beautiful yew in Messrs. Standish & Noble's nursery, all looking remarkably healthy. They profess to have both male and female plants; and certainly there is a difference in the foliage and habit of the two. One, which was said to be the female, was planted out in the open border, and had made shoots more than a foot long this season. From the appearance this plant made, we can easily believe that it must be a fine and very ornamental tree when fully grown.

C. FILIFORMIS (Thready). A curiously handsome drooping shrub, for it can scarcely be called a tree. The young shoots push out in a most grotesque manner from the main stem, some quite upright; some horizontal; and others shooting straight downwards. This odd way of growing renders it a strikingly curious object, well worthy of cultivation in the pinetum. It is perfectly hardy.

C. PEDUNCULATA. Named originally *Taxus Harrington*ia, in honour of the late Earl Harrington, who was the originator and owner of the noble collection at Elvaston Castle, so often referred to in these pages. It is this plant that formed the type of the genus, though it is a matter of regret that the specific name was not retained. It is a native of Japan, though we know but little of its

height and uses. However, it is a handsome tree, and ought to be in every collection.

Cryptomeria japonica (Japan Cedar). From *Kryptos*, hidden; and *meris*, part; the structure of all the parts of the flower being hid. The seeds of this tree, now grown in almost every garden of any note, were introduced by Mr. Fortune no longer since than 1844, and, if he had introduced no other flower or tree, he would be amply entitled to the grateful thanks of every lover of fine trees. It grows from 80 feet to 100 feet high, and the timber is said to be excellent, the growth rapid, and the habit most beautiful. The only fault it has is that in very exposed situations the leaves turn a little rusty in winter; but, as it was stated in our notice of the gardens at Trentham, last year, Mr. Fleming preserves the colour of the leaves, this objection may by the same means be obviated. They keep the rich colour by giving the trees a liberal allowance, during the growing season, of liquid manure.

In the Horticultural Society's Journal there is a very interesting paper on this tree, by Mr. Gordon, which, at that time, was comparatively new. He says, in regard to its cultivation, "The Japan Cedar seems as easily managed as the common Chinese Arbor Vitæ, and like it succeeds in any soil or situation which is not very poor or wet." In the large nurseries at Bagshot, and Knap Hill, especially in that of Messrs. Standish & Noble, there are immense quantities of it. In their soil, which is thin and poor, much like that of our wild heaths, it appears to grow with great rapidity, even as quick as the common Larch. We saw them a few days ago, and were much struck with the number and density of the branches on each, arising, no doubt, from the open situation in which they grew, nature having provided, as it were, these numerous shoots to balance the trees against the winds that must prevail in such a free-from-shade situation. This peculiarity rendered them much handsomer in appearance than if they had been drawn up more quickly in a close, or well-sheltered site. This tree, when of a right size for such a purpose as we shall mention presently, is now, considering its late introduction, exceedingly cheap, and it would be still more so if the demand for it increased. The purpose we allude to is the planting of our wide wastes (mixed, perhaps, with the Larch) with this new and beautiful tree. We have watched its growth and capability of enduring our climate, and are now almost certain that it would endure our severest winters. There are thousands of acres of land in the neighbourhood of Bagshot and Knap Hill, that are not worth, in their present state, 5s. per acre, that would grow this tree well, and would, in course of time, be adorned with its beauty, and rendered valuable by its timber. But alas! our landed proprietors appear to be very supine now in such patriotic pursuits. Nurseries are crowded with all sorts of trees, without almost any demand for them, and nurserymen are almost at their wit's end what to do with them. Thousands are stubbed up every year, and after the stems are cut up, for perhaps dahlia stakes, the residue are sent to the rubbish heap to be burnt. This is a melancholy, though too true a picture of the state of one half or more of the nurseries, both in England and Scotland. It is true, there are a few exceptions amongst our nobility; there are some who make it a point of honour, if they cut a few trees for sale, they plant fifty times as many in order that their posterity may be able to cut down also for profit. May the number of such patriotic individuals be increased.

(*To be continued.*)

THE HOLLYHOCK.

(*Continued from page* 385.)

Exhibiting.—Much difference of opinion is abroad as to the proper mode of exhibiting these now really fine double flowers. Some are for showing them in boxes, made in a similar manner to those we described lately for cut roses, each bottle to hold a single bloom; others show them in bottles simply and singly, without the box; but the best way, we judge, is to show them in spikes, some two feet or less long, according to the state they may be in at the time. This latter method shows better than either of the others the entire merits of the varieties as ornaments for the flower garden. To obtain flower-stems with numerous perfect flowers on each, it will be necessary, or at least judicious, to cut off, in an early stage, the extreme ends of the flower-shoots; the flowers will then open to the very extremity, and will be beautiful objects on the exhibition tables.

Conveying them to the Exhibition.—This mode of showing in spikes renders the conveyance somewhat difficult, especially to a great distance. The only way to be completely successful in such a case, is to have a deep box with one side hung on hinges, so that it can be opened easily, and the spikes taken out in succession; the bottom of the box should be fitted with bottles to hold water, and each spike should be securely fastened in each bottle. To keep them, there should be a sufficient number of round laths nailed across the box, about midway in the depth, and these should be placed exactly between each row of bottles; then, as each spike is placed firmly in each bottle, a string should be tied to each spike both ways. This would keep each spike firmly in its place, and thus prevent the blooms rubbing against each other. By this method we have seen spikes of Hollyhocks successfully carried by rail for fifty miles. If they are exhibited in single cut blooms, they are, no doubt, more easily conveyed to a distance; but, for reasons already given, we adhere to the opinion, that in all cases the Hollyhock ought to be shown in spikes.

Those societies which offer prizes for Hollyhocks, should by all means so arrange them, that the small growers should have a chance of winning prizes. For large growers, such as Mr. Bragg, Mr. Bircham, Mr. Chater, Messrs. Paul, and such like, the prize should not be for less than stands of twenty-four varieties; but for amateurs, gentlemen, and cottage gardeners, there should be prizes offered for stands of twelve, and even six, in each. This gives every grower encouragement, and each should be confined to his class; that is, no grower should be allowed to compete in more than one class. This would be acting fair to all parties, and would give satisfaction, as well as encouragement, to all.

Propagation: By Cuttings.—If our forefathers had been told that it was possible to propagate the Hollyhock by cuttings, we fear they would have laughed at the idea; but such is the perseverance of florists in the art of propagating those plants which the public require, that even the soft, pithy stem of this plant is made to produce numerous plants, so much so, that in one single season we have known one single variety multiplied by cuttings into several scores of plants; if we were to say hundreds, we believe we should write the truth. A young man whom we have the pleasure of knowing, Mr. Macintosh, of the Edgeware Road, raised last year a seedling of excellent qualities, which he named the *Duke of Wellington*, a party-coloured flower, of excellent qualities. He propagated it, as a matter of course, as well as business, and the day before we wrote these lines we called upon him, and found he had been very successful in increasing it, so that he has now a large stock of it. The way he accomplished this is similar, in most respects, to that described in *The Cottage Gardeners' Dictionary*. He took off the bottom side-shoots, cut

them into lengths, put them into pots filled with light soil, which he pressed down tight to each cutting, plunged these pots of cuttings into a gentle bottom-heat, watering but little till they showed signs of growth, and soon had the satisfaction of finding his cuttings produce roots, which, as soon as he perceived, he potted them off into small pots, and kept them in a cold frame till they were well established and ready for planting out. But this was not all; the side flower-stems were cut off, and every joint, whether it had leaves or not, was cut off just below the joint, leaving about an inch of the stem above the joint. Each joint had a dormant bud, which, when isolated, and placed in shallow pots, in a gentle stimulative, started into growth, and soon showed a shoot projecting above the soil; this, in time, as the leaves unfolded, pushed forth roots, and formed a plant. This method, with which we were much pleased, shows that wherever a bud is, it contains within itself the germ of an entire plant, which, when correctly managed, can be formed into a plant, equal in vigour, and in every way as perfect an individual as the plant from which it was cut or taken.

This propagation should, of course, be performed as soon as possible. Cuttings are not safe to put in later than August, because there would then be a danger of such very young plants being not carried safely through the winter. T. Appleby.

(*To be continued.*)

THE TAN-BED AND ITS USES.

As some details relative to a hot-water-heated pit were entered into last week, and a description of one given capable of serving many purposes, I now take up the subject of the far-from-despicable bark-bed, or, as some will have it, "tan-bed," which, though an agent of heat less under our command than "fire or water," or both combined, is yet of too much importance to be hastily discarded, especially when its claims to economy are considered from its not requiring that "night attention" which the amateur, or his assistant, cannot well spare the fire-heated structure; independent of this, too, the cost of pipes, boilers, flues, and fire-places, are very important items in the building expenses of a pit of any kind; and although no pit ought to be without them in some shape, where much winter forcing is going on, still the bark-bed has its claim, and we shall be sorry to see it discarded altogether. In fact, many fire-heated houses are indebted to the bark-bed for furnishing their inmates with the bottom-heat necessary to their welfare; and this is very well exemplified in the "pine-pit," where plants in pots are plunged in this kindly-fermenting material, more especially if it be in the neighbourhood of a town. In remote country places tan is less plentiful, and tree leaves being more abundant they are often substituted, and when good they furnish a nice and lasting mode of applying bottom-heat, which some prefer to tan; but as the heat from tan is brisker, and, when well-tempered, equally lasting, I like, on the whole, the tan-pit best; and when plants are to be plunged, and a smooth agreeable surface made, it certainly has many advantages over leaves; and as many of our readers are unable to obtain the latter, we will at once address ourselves to the duty of describing the uses to which a bark-bed may be put, and which we also presume to be without any other mode of heating.

To the amateur residing in the neighbourhood of a town, where tan can be had very reasonably, and where, perhaps, his whole forcing department, or even area of glass, consists of some three or four lights, the bark-bed offers many advantages. On it he may grow his cucumbers for spring and early summer use; or he may, prior to using it for that purpose, use it as a propagating pit, where he may strike his flower-garden plants by wholesale. Strawberries may also be forced on such a place, and many other duties may be confided to the bark-bed. When its duties are confined to such purposes as the above, and the amateur wishes to make it so accessible that his lady friends may be enabled to look into it without encountering the difficulties of climbing a dung-heap, or a precipitous wall, it may be built without any arrangement for heating by linings, as well-prepared tan will retain its heat long enough to mature any of the crops mentioned above; even melons may be safely grown thus; and as tan cannot well be piled up against any object without having a wall to rest against, an extra wall in back and front adds materially to the expense of the whole, besides being in the way of the contents of the pit being seen, or work done there. Now, though we have had tan-pits, with linings applied advantageously, and have seen others, "Mill's pit," for instance, heated entirely by linings, yet, when that appendage seems necessary, we think the pit deserves "fire heat" in some shape or other; and assuredly the improvements of the last few years in applying them, have driven "linings," in a great measure, out of the trade. That the interior bed will retain its place some time longer, we firmly believe; but it is only in very few cases that its adjunct "linings" will be granted a place.

A very good and useful bed or pit may be made by excavating the ground about a foot or eighteen inches (not more), then building the walls, which may be of half brick in front, with occasional nine-inch pillars, but the back wall ought to be a nine-inch one, as we suppose its height inside to be about five feet or more, the front one about fifteen inches lower; this inclination will do for a six-feet light,—the wall-plate and rafters all being right, and well-glazed lights, with squares not too large, being put on, we will now see to filling the interior.

A new beginner has some disadvantages to encounter in this respect. New tan is a fiery, obstinate servant, at times; if, therefore, you cannot obtain any old, means must be taken to dry such as you have as much as possible, as the liquor with which it is charged forms the heating or fermenting power. This is easily accomplished in summer, but it is seldom wanted then; however, the drying winds we have in winter will do much that way; so if there be any dry open shed in which it can be spread thinly, and frequently turned, it will speedily part with a portion of its dangerous compound; should this not appear practicable, and the pit and its heating powers be wanted immediately, a less quantity than usual must be put in, and some inert substance put in the bottom, in order that the heated portion may be the proper distance from the glass. It is no uncommon thing to see a bottom-heat of leaves having a tan top, on which the plants are plunged; but as this may not be attainable, any other substance will do, as in this case it is understood that the tan itself forms the heating contrivance; but let it be remembered that this half-quantity of rank-heating material will not retain its warmth half so long as the proper quantity well-seasoned and prepared; so that, except for urgent cases, or when plants are temporarily plunged, and can at any period be removed, we would not advise its adoption; but there is one advantage—tan is, or may be prepared for use in a more permanent way, and when opportunity offers, the bed may be renewed by removing all the foundation part, and thoroughly blending the old and new tan together, and filling the pit the proper height. A depth of three feet is sufficient for a tan-bed, under any circumstances; more may be given, but we think it superfluous; though much depends on the quality of the article, and other particulars. Old tan that has been in use some years becomes decayed, and in that powdered state its heating powers are gone; it

is better then to sift it, returning only the coarse portion to the pit to mix with the fresh. In choosing tan, refuse that which has lain and got what is called scalded, that is, become white by over-heating; when, however, you have no old to mix with an entirely new bed, a part of this is serviceable. If, by any means, the tan-bed should get, or become likely to get too hot (as every evil of this kind ought to be forestalled), holes made in it with a stake, and cold water poured in, will be of service; great care and close attention will be requisite here, as any heat above 90° will be fatal to plants growing. Pots plunged had better, therefore, be taken to the surface, and if the amateur has trusted a hill of cucumbers too hastily on his newly-made-up bed, let holes be made all around it, and cold water poured in, and the vacant places being somewhat stirred, will allow a portion of heat to escape, which, however, it is needless to say, must be charged with vapours anything but agreeable to the tender plants cultivated there. The prevention of this can only be effected by a more careful preparation of the tan, which is not half so troublesome or lingering a job as may at first be imagined.

J. ROBSON.

COCHIN-CHINAS *VERSUS* SPANISH AND DORKINGS.

"Yes! Sturgeon's breed may be forgot,
And Punchard's called a worthless lot,
And Andrew's fame be less;
But still, in poulterer's shops so neat
In Leadenhall Market, or Mount-street,
The Dorking breed shall long compete,
With triumph and success."

ANON.

I TRUST to your kindness to insert one more "crow" from "Gallus," not that I think that the controversy between myself and Mr. Wingfield (whose courtesy I gladly acknowledge) *can* be decided by any thing but a further experience of the merits of the different breeds of poultry, and the really fair trial, which you suggest in your answer to a "Novice," in THE COTTAGE GARDENER of August 19th. I wish I could flatter myself that I deserve the compliment Mr. Wingfield is good enough to pay me; but I write, not *from* vanity, but *for* information, which I believe is to be gained by discussions of this sort.

To answer Mr. Wingfield's question. My best Spanish hens came (I believe) from Holland. I imported some birds from Spain, but they were failures, not worth their carriage.

I thank Mr. Wingfield for pointing out an error I made, in saying "Spanish *and* Dorkings," instead of "Spanish *or* Dorkings." Where, as in my case, two breeds *can* be kept separate, I believe the "*and*" may with advantage be used; but in the case of a cottager, or farmer, where no such facility exists, the "*or*" is the proper thing. If the demand (as in this part of the world) is for eggs, *then* "Spanish for ever." If it is for chickens, then "Dorkings," I say. With regard to the comparative merits of Cochin-Chinas and Spanish, as layers, I still own that I think "that the former laid even more eggs than the latter" ("*in the year*," *though*, I added); but I believe this superiority was caused by the Spanish having begun to moult earlier than the Cochins. I do not think the Cochins have now "averaged more than six eggs a-week." They have *now* ceased to lay, while my Spanish, who moulted unusually early, are almost ready to begin again. On the other hand, I weighed to-day many Spanish and Cochin-China eggs *separately*. The former, on an average, exceeded the latter in weight, one ounce each egg. Now, considering, that besides what I have used, given away, hatched, and sold at fancy prices, I have, up to the end of July, sent to the market 2592 eggs, which, supposing them to have been all Spanish, would, at the rate I name, outweigh a similar number of Cochin-China eggs by 162 lbs. I think that had I gone into Penzance market to buy eggs, and had at two stalls seen the two sorts, equally fresh, and *equally priced*, I should have bought the larger and heavier eggs, in spite of "the rich brown tint" Mr. Wingfield so much admires.

I may add that I did not allow Cochin-China hens to sit *at all*.

The two questions, still in discussion between Mr. Wingfield and myself, are—

1st. The excellence of a Cochin-China as a table fowl.

2nd. Whether their consumption of food is greater than that of other fowls.

Determined to give the contest a fair trial, I have, within the last week, made an inspection of the stock of several Cochin-China amateurs, from whom I not only received much kindness, but great hospitality, and at their tables have partaken of

"Cochins young, and Cochins old,
Cochins hot, and Cochins cold."

And though it does not seem well to eat a man's dinner, and then *abuse* it (which I hope is not quite my case), I must still proclaim my conviction, that a Cochin is no more to be compared to a Dorking, than is a red-legged partridge to a grey *partridge* (*not* a grey parrot, as Thomas still thinks).

A Dorking (it seems to me) puts on fat on the "white meat," that is, the wings and breast, where you "can cut and come again." The Cochin, if he *puts on fat at all*, collects *it all about his legs*. Of this fact, if Mr. Wingfield ever comes in our neighbourhood, and would afford me an opportunity, I would, with much pleasure, try to convince him.

With regard to Cochin-Chinas being great consumers of food, though I find "Doctors *do* differ about it," my enquiries rather tend to confirm me in my opinion, that a Cochin-China eats nearly twice as much as a common fowl; and I find that Anster Bonn *once* thought so, for at page 340, vol. 6, of THE COTTAGE GARDENER, I find—"Where common poultry are fed twice a-day, it is desirable to feed a Cochin-China three or four times, and to give the food so abundantly, that some may be left after the fowls have satisfied themselves!" "Satisfied themselves," indeed! I have often looked on, with wonder, to see when that would be, ready to exclaim with Thomas, "What chaps them be to eat." A man in this neighbourhood, who possesses a very good Cochin-China cock, on which he sets a great value, told me, that "he reckoned he ate as much as any three hens."

Now, if this is so, they may well put on *great* size, but whether profitably to their owners, is still the question. There can be *none*, I fancy, as to the size of their eggs, as compared with Spanish.

I hope some day to have the pleasure of making Mr. Wingfield's acquaintance, and discussing this and many other questions with him.

Since writing this, I determined to ascertain the opinion of a practical poulterer as to the value of a Cochin-China chicken as a table fowl, and believing Mr. Baily, of Mount-street, Grosvenor Square, to stand about the head of his business, I wrote to him, to ask whether he would buy of me, *to kill*, twelve Cochin-China cockerells, which I was fattening, from not liking their colour. As I knew he also kept fowls in the country, I asked whether he had kept any account of what his fowls ate, and if *he* thought Cochin-Chinas large consumers of food or not.

I put the question to him in the fairest possible way, and his answer received this morning I now enclose you. It is the opinion of a poulterer (who knows his customers tastes), not an amateur. Your readers must judge the question themselves.

"*Mount-street, Grosvenor Square.*

"Sir,—In answer to the favour of your's, asking whether I can take some Dorkings and Cochin-China chickens, fatted for the table, I should advise you by all means to sell the latter alive, as they will make but little dead. The Dorkings, if well fed, will always find a market, and *they* "pay for feeding." They fat and make good birds, but all I could ever do, would not *fat* a Cochin-China. To fatten—a fowl should fill its belly, feel satisfied and happy, sit down and thrive, but a Cochin-China fowl never *is satisfied*. Mine eat all day, and are always ready for more. I believe they eat *twice as much* as any other.

"I have a shrewd old woman who *walks* fowls for me, and bred some of the first Cochin-China fowls I ever had. She had kept them for me ever since, until a short time ago,

when I had taken all her birds away, but told her I should send her some more.

" 'Do (she said), but please don't send me any Cochin-Chinas.' I pay her according to the number of eggs she gets for me, and therefore said—"Why Dame! they are the best layers." "True (she said), they do lay a few more, but they eat more than double. They ruin me."

"I am thus explicit, because I believe, if you are going to fatten Cochin-Chinas, you will meet only disappointment with *them*. Not so with the Dorkings; and my proof with any dissentient, should be—let them send to Leadenhall twelve Dorking chickens, twelve Cochin-China chickens, and twelve of any other breed. Let them be the same age, and fatted alike, I will acknowledge myself beaten, if the Dorkings do not make considerably more money (most likely one-third) than any of the others. They will there be purchased by practical men, who are, or should be, perfect judges of the articles they deal in, when they see them dead.

"I remain, &c.,

"Sept. 1st, 1852. *(Signed)* JOHN BAILY."

I wish somebody would give us their opinion about "a hen laying twice a day." *I* certainly have known it done, but my belief is, that when such a thing occurs, there will be *no* egg the next day; and that, far from being a cause for congratulation, is a sign that the hen is in an improperly excited state. A medical man would describe it "as the secretion being unhealthy, and excessive." In these cases, or when a hen lays soft eggs (I have known a hard proper egg enclosed in a soft one), I have treated both patients alike, by separating them from the flock, giving them *no* dry corn, but bread sopped in water, or other cool, soft food, and plenty of lettuce leaves. I have now a hen under this treatment. The cure has always been effectual.

I have now only to thank you for inserting my letters in THE COTTAGE GARDENER, and to bid you heartily, farewell.

GALLUS.

RAISING A STOCK OF BEDDING-OUT PLANTS.

(*Continued from page* 374.)

HAVING filled two of the glasses with *Verbenas*, I next take that most useful class of bedding plants, the *shrubby Calceolarias*, and proceed with them exactly in the same way; I choose four of them, *Amplexicaule*, and a *dwarf yellow*, a *very dark brown* one, and *Kentish Hero*. I had only one plant of the last-mentioned last year. In the autumn I put in every cutting I could take from it, and, on removing the glass this spring, I found that I had enough good, strong, healthy plants to fill a bed, and certainly a most beautiful bed it is. It came in very early, and is still a mass of bloom. These Calceolarias require no attention through the winter, the glass being a sufficient protection, and I can always depend upon preserving from forty to fifty plants under each light.

The next glass I fill with different varieties of *Penstemons*, and another with the *Double Feverfew*, *Chelone barbata*, and the more tender *Phloxes;* and the last I keep for experiments. I noticed what Mr. Beaton said about *Shrubland Rose*, and I have some hope of adding this little favourite to my list.

About the middle of March the glasses are all taken off, and then I take a large table-knife and cut deeply between every row of plants each way, this gives them a salutary check and prepares them for transplanting. I seldom cover them after this, night or day; and towards the end of April, if the weather is showery, I plant out in the beds, having for the two previous evenings given a thorough good soaking of water. If the plants are removed very carefully, many of them may be taken up in the little squares of earth made by the cross cuttings. I forgot to mention, that if the mildew attacks the *Verbenas*, a slight dusting of sulphur now and then may be useful. T. B.

FURTHER NOTES ON THE NEW SYSTEM OF MANAGING SWARMS.

AFTER a close and attentive observation of some years I have pretty nearly come to the conclusion that the main laying of bee-queens is generally by *fits and starts*, and probably a good deal dependent on the state of the weather. It appears to me pretty certain that there often exist considerable intervals of *repose* between the layings, even in April and May, for I have several times observed, that when a queen has laid her eggs in the cells *generally* in any part of the hive, although from sudden and, perhaps, severe cold these may have perished, and after a time, therefore, have been carried off by the bees, yet these cells have remained for *many* days, even for a fortnight, or more, unoccupied by either honey or *eggs*. Whether, however, this *fit-and-start* laying be voluntary, or involuntary, on the part of the queen, in most hives, it certainly is a *fact*, that long intervals do occur in which but few eggs, comparatively, are laid in a hive; for, as a vigorous queen will sometimes lay as many as eight hundred or a thousand eggs a-day, and continue this prodigious fertility for many days in warm weather in spring, it is clear that *ordinary* hives, with fertile queens, will soon get so filled with brood, that *weeks* must elapse before any eggs in considerable quantities can be again laid in these cells. Now there is a practical lesson to be learnt from this, which may be acted upon by all apiarians who have *glass hives* (*i.e.*, hives of wood or straw well supplied with *good-sized windows*), or who have time and courage to examine their common hives by looking into them from the bottom now and then. And the lesson is this—that if a swarm issues naturally, or can be forced out artificially from a hive about the time when the young bees are every day *beginning to leave* their cells in large numbers, then the *old stock* (as well as the swarm which issues from it) *must* do well, even though there be no royal brood in the hive, and though it be *entirely* deserted by its full-grown population; for there will be, every day, a large addition to the population from the continual hatching of young full-grown bees, who will immediately set about rearing a new queen in the place of the old one—the hive being always carefully closed up for at least *one entire day*, if the swarm have been forced out by artificial means. Whereas, if the swarm had issued naturally, or been artificially driven, and made to take the place of the old stock, at a time when the young bees were mostly *hatched out*, and the cells begun to be occupied again with eggs or very young brood (*unceiled*), then there would be great danger of no young queen being satisfactorily reared (though of course the *attempt* would be made), and of the hive never recovering its great depopulation at the time of its transfer to a new stand, because of the very few young bees that would afterwards come to maturity in the hive. This, I believe, will quite satisfactorily explain to your correspondent, "B. B." (and one or two others), the failure of their old stocks treated on my plan. One thing, however, I have been certainly more strongly impressed with from my experiments this summer, that, save when the bee-master has abundance of time to bestow on his bees, and is *most careful to adhere to the rules laid down for his guidance* in bee-books, it is far more for his benefit to trust to the *natural* process of rearing queens than generally to adopt the *artificial* process, which, in the most experienced hands, will often fail. But yet, I think the diligent bee-master will in future see it to be to his interest at least to *anticipate* the issue of his *natural* swarms, *i.e.*, to make them swarm *at a right time*, viz., *just when the royal brood has begun to be generally ceiled in* (between the seventh and twelfth day after eggs have been *laid* in the *royal cells*), i.e., *if the stock is otherwise ready from the state of the brood comb* (see what has been said above) to have a swarm taken from it. I shall best explain what I mean by adducing an instance of *fact*. At the end of May I observed that one of my glass hives was making preparations for swarming, in spite of the quantity of room in a super with which I had supplied them, *and where they had begun to work*. There were no less than four royal cells visible near two of the windows, the last of which was finally ceiled over on the night of the 31st of May. Being in daily expectation, therefore, of the issue of a swarm, and not wishing that my bees should escape me, for I could not watch them well, I deter-

mined to lose no time, and to *make* them swarm. Early the next morning, therefore (June 1st), I lifted off the super, which was half-full of bees; set it in the place of the lower box (the old hive), which I took away, turned up, and pulled out carefully a fine drone-comb entire, with two of the royal cells attached to it. This I adjusted with care in a good sized bee-glass (a super would have done as well, or a common straw hive if nothing better presented itself), and set it over the super above-mentioned, where were a large number of bees, as I said before. Next I removed the old box to a vacant place, not four feet distant, in my American bee house, there being a famous artificial *driven* swarm of *April 27th* intervening. As it happened, the old queen was either in the comb which I had extracted from the stock, or amongst the bees in the new box (the super), for she was certainly *seen* there a short time afterwards, and the two royal cells were in a couple of days destroyed in the glass; the old removed stock, in consequence, had to await a young queen, who has since turned out very prolific, though there were *hardly a dozen drones* left in the box that did not join the swarm and old queen in the super, as did the large majority of bees in the old stock! Subsequently, when the young bees were all hatched out, and before the young queen had begun to lay, I cut out half of the old combs, by way of renewing the hive. These have been replaced by beautiful new combs (*the drone-combs, moreover, being replaced by worker-combs*), and a fair quantity of honey has been collected, quite enough for their winter store. The swarm in the super is also richly supplied, besides which I have taken off the glass with about 8lbs. of pure honeycomb, all this in a very bad season. Here, then, is an instance of artificial help given to a natural swarm on the eve of its issue, which was treated according to my system, the swarm taking the place of the old stock. Had we but some *heather* about here, I doubt not (for my stocks were very populous), that I could have vied with our Yorkshire friend, C. R. R., in the produce of my apiary; but our honey season here lasted only from the 4th to the 17th of July. There was not a pound of honey, I believe, in either of the above stocks at the end of June!

Another instance of similar artificial treatment of a stock to the above, and I have done. On the 15th of May I turned up a common straw hive, whose queen (a fairly prolific mother) was supposed to have been born in 1850. On examining the combs narrowly, I discovered *two royal cells with grubs* in them, about six or seven days old from the laying of the eggs. I immediately *drove* a swarm out of the hive, set it on the old stand, *in a large hive filled with good comb*, removed the old stock to another stand four or five yards off, and shut it up till the third morning. Both hives did well, the swarm having increased 17lbs. in weight by the beginning of June. Strange to say, however, on examining it the other day, September 4th, its weight was found to be *only about 20 lbs. contents!* while the weight of the old stock was full 28lbs. contents, and yet the latter had been depopulated on the issue of the swarm, as is usual under like circumstances! I have no doubt in my own mind that the *swarm* must have thrown a virgin swarm, or swarms, in July, which, for want of watching, escaped us. This has been by no means an uncommon occurrence in these parts this year. Certainly, on plundering it the other day, by driving out the bees, to add them to a weak experimental stock in my bee-house, the queen appeared much larger and finer than the original queen driven in May; indeed, I never saw so large a queen at this season of the year.

From the above it will be seen with how much ease and advantage embryo *natural* swarms may be compelled to issue from one to seven or eight days, or more, before their time, by which means the very annoying loss by escape of so many fine swarms may be avoided, and without the least injury to either swarm or stock. There is no difficulty in turning up a hive of bees occasionally in May or June, and if it be done when most of the bees are out in the field, a very minute observation of the interior of the hive may be obtained. Let the swarm be made when one or two of the royal cells are actually ceiled over, and when there is much *brood of worker-bees* also ceiled over, and the most complete success may confidently be anticipated.—A COUNTRY CURATE.

TO CORRESPONDENTS.

HEATHS FADING (*A Young Beginner*).—These have been growing freely, have had plenty of air, shade in bright weather, and have been regularly watered, and yet *Hyemalis* and *Exsurgens* appear dying, while others under the same treatment are thriving. We cannot resolve the difficulty. But we have seen such accidents, *when after shading*, the shading medium has been removed, and a fierce sun beat upon the pot, and the collar of the plant.

IPOMÆA LEARII (*Michel*).—Much obliged by the information respecting this plant receiving all the drainage from the floor of an orchard-house. Where room was scanty, it would leaf more than bloom in such circumstances.

WARM CONSERVATORY AS A LADY'S FLORAL BOUDOIR (*Ibid*).—You will see the matter has received some attention. We hope you will persevere, and we shall be very glad to hear of your success, even though you should give up growing as climbers plants that require a strong and moist heat.

PRUNING CONSERVATORY CLIMBERS (*Ibid*).—This will not be forgotten. You would see your want was partly met a fortnight ago.

ROSE SEEDLINGS (*A. J.*).—Unless you were a first-rate gardener, the safest place for your seed-pans all this next winter is close under a south wall, the pans or pots being plunged level with the soil, but resting on two brick-bats, for safer drainage. Early next April remove the strongest of the seedlings to a seed-bed, as Mr. Appleby recommends.

GREENHOUSE BULBS (*S. S. S.*).—Send us the "long list" of greenhouse bulbs which you made from the *Cottage Gardeners' Dictionary*, after making it out alphabetically, and we will analyse it for you, and give full information about every one of the bulbs, and also the probable prices, and very likely the real prices of a great number. We have often wished for such a list. Where a genus is extensive, you need not enumerate all the species.

DAPHNE ODORATA (*Recent Subscriber*).—This Daphne is propagated by grafting on the spurge laurel (*Daphne laureola*), or by cuttings, and the best soil for all the Daphnes, is sandy loam, and nothing else.

DATURA (*Ibid*).—This is as easy to rear from cuttings as a vine or a Fuchsia, and it delights in the very best and richest compost one can make. The very same treatment as Fuchsias receive will do for Daturas; they may be planted out-of-doors at the same time as the Dahlias, and be left out all the winter, if *the frost and damp* are kept from them; old plants of them may be housed and kept as dry as Fuchsias in winter, or may be set to work at the option of the owner. A hole two feet deep, and four feet wide, half filled with the best rotten dung, and the other half the best loam in the parish, would make a tolerable good bed for a two-year-old Datura, and if to this you could add four gallons of moderate good liquid-manure three times a-week, from June to September, you would see something worth looking at, and worth telling a tale to us cottage gardeners.

DORKING FOWLS.—"The writer has a fine Dorking cockerell six toes on one foot, and five on the other, single comb, pure white, which he would like to exchange for a similar bird. An advantage to both parties, as it is essential to change the male, and not breed in and in.—P. P."

ROOKS.—*P. P.* wishes for information as to the easiest and most practical way of establishing a rookery—trees being suitable.

LANDSCAPE GARDENER (*J. C.*).—They are as thick as blackberries all over the three kingdoms, and their charges have been advertised at from one to five guineas a day, and travelling expenses, but what they do or did for these sums, we cannot say. Our contributor, Mr. Beaton, goes out to be consulted about every species of improvement about estates, but does not enter so far as to take jobs, or give plans. Mr. Appleby has engaged in the same occupation, as will be seen on referring to an advertisement to-day.

PINE GROWING (*A Dyer by trade*).—With a little patience, we will see what we can do for you. In the mean time, a little necessary correspondence must take place, preparatory to setting the question before you as a guide.

SUBSTITUTING QUEENS (*W. B.*).—The only plan I can suggest for substituting a young queen for an old one, in the instance of *W. B.'s* old hive, is to fumigate it, and so catch and destroy the old queen *before* the other fumigated bees, with the young queen, are added to them. It is important, before the junction is effected, to be secure of the death of the old queen. I should say that the cause of the inactivity of *W. B.'s* stock, to which he added in a side-box the fumigated bees of another hive, is owing to their queen being either dead or worn out with age. Let him treat it as above, if he prefers fumigating to driving.—A COUNTRY CURATE.

PETUNIA BEDS (*Leguleius*).—There were two grand mistakes in your plan with the Petunia beds. When people, like you, get up to the desirable height from which they can, also like you, exclaim—"My flower-garden now presents a splendid spectacle," we say, from this height, we would not envy the head or eye which could appreciate or see any beauty in a bed of mixed Petunias, even if only planted with three distinct sorts. Your beds are planted with random seedlings, first error; and the beds were made one-half too rich for them; the second error being nearly as bad as the first. A square, or oblong piece of ground, in a nursery, or in a kitchen garden, planted with seedling Petunias, has some meaning in it. The plants are set out there to flower, and to be proved; or if a cottager had one bed for flowers, a lot of seedling Petunias would look as well in it, if not better, than Stocks or Gilliflowers; but when any one has in two years, by the assistance of THE COTTAGE GARDENER, arranged "beds of Verbenas, Geraniums, Calceolarias, Lobelias, &c., better than he ever saw, even at the crack show places round London," we do not wonder to hear him say that three beds of seedling Petunias are no better than one of mixed cabbageworts. One expense brings on another, and next year you must plant each bed with one kind of Petunia only, and the *Shrubland Rose* is the best. Did you see a better in the "crack places?" *Devoniensis* is the next best, and the *Large white* one you saw at Kew, is the best white; of the three it requires the poorest soil—the name is *Shrubland White*. *Devoniensis* is filled up in the eye, as if going to turn double.

CAPE HEATHS (*Ibid*).—Who has proclaimed more lustily than THE COTTAGE GARDENER, that cold turf-pits are better for young Heaths than all the greenhouses out of Greenland. Here then is another opening for "a splendid spectacle." Begin with the varieties of *Ventricosa*, and lots of *Cavendishii, Elegans*, and such hardy kinds, till you get into the right way of growing them. Also look for Erica and Heath in the indexes of our former volumes.

TROPŒOLUM SEEDS (*Ibid*).—This is just the right time to sow the seeds of *Tricolorum* and *Pentaphyllum*, only, as Pat would say, they ought to have been in two months ago, if they were ripe so early; but now is a very good time. Last year's seeds are of no use now; they would not all come up for three or four years.

WHAT OUGHT A GARDENER TO DO?—*A Green One* writes thus:—"I have 3½ acres of garden divided thus—Lawn, three-quarters-of-an-acre; paths and shrubberies, three-quarters-of-an-acre; fruit-garden, one-quarter-of-an-acre; kitchen-garden, open, no walls therein, one-acre-and-three-quarters. I also have one conservatory, twenty-eight feet by fourteen feet; one forcing-house, twenty-four feet by twelve feet; one grape-house, twenty-four feet by twelve feet; and two cold-pits and some boxes and lights. Now, I want to know how much labour I want, to keep it in good order? How many hours will it take one man to mow three-quarters-of-an-acre; and ought it to be rolled, and when? for my present man says it should not be rolled through the summer months, and finds now it cannot be cut as the grass is weak. If you could give a manual for a moderate-sized garden like mine, it would be very desirable, to prevent disputes and changes between employer and employed. What time does it require, at this season, *each day*, for the head gardener to be about his houses and pits? I have grown some tobacco, but don't know what process it should go through to make it fit for smoking houses." We insert this entire, because we shall be glad to hear the opinions of others upon some of the points. It is quite impossible to lay down any general rules applicable to *all* soils, *all* seasons, and *all* tempers. A master may always see whether a gardener does his duty. To two of the queries we will reply. *Lawns* ought to be both rolled and watered in summer, unless there is some special reason to the contrary. The mode of drying *tobacco* is given at page 41 of our last volume.

PELARGONIUMS (*An Amateur Geranium Grower*).—Your present collection is good, but if you make the addition you mention, you should cast out *Rowena, Orion, Hebe's Lip, Titus*, and *Duke of Cornwall*. You mention *Magnet, Chieftain, Mochanna, Incomparable, Ambassador, Enchantress, Ganymede, Rosamond, Prince of Orange, Emily*, and *Mont Blanc*. These are all desirable, and Mr. Appleby says you should have also a few dark ones, such as *Cuyp, Conspicuum, Alderman, Aspasia*, and *Alonso*, and a light one named *Arnold's Victory*.

SEEDLING CARNATIONS FLOWERING (*H.*).—Your seedling Carnations, sown in August, will scarcely flower next year. You should have sown them in April, and then every one would have bloomed. Some of them may flower late in the autumn. Your *seedling Strawberries*, sown early last spring, may fruit next year, if well nursed, and no runners allowed to remain on them; at least the strongest plants will, and they will all fruit the year following.

COTTAGERS HORTICULTURAL SOCIETY.—The *Rev. R. Burgess, Vicarage, Radcliffe-on-Trent, near Nottingham*, says:—"Will any reader of THE COTTAGE GARDENER kindly favour me with a copy of rules for the establishment and regulation of a Horticultural Society, to give encouragement to cottagers and labourers exclusively?"

POTATO-PLANTING (*R. H——, Dublin*).—The *Walnut-leaved Kidney*, and the *Hopetoun Early*, will ripen with you, and any where in England, by the end of July. In any place south of the Thames the *Ash-leaved Kidney* will be ripe by the same time. They all keep well. We never green the tubers we employ for planting. Mr. Errington recommends it to be done. We plant with a dibble six or seven inches deep, as fast as sufficient ground for a row is dug, and never allow the soil to be trod upon after it is dug. We do not plant upon raised beds; if our soil was at all wet or heavy, or our climate rainy, we should.

MOVING BUDDED ROSES (*Discipulus*).—See what Mr. Beaton says to-day.

ACORNS FOR NEW ZEALAND (*P. V. M. F.*).—We should sow some thickly in soil in shallow Wardian Cases, and have them sown in drills, if sprouted directly they reached there. Some we should have put in canvass bags, and *hung up between decks*. If put into the hold they heat, germinate, and are spoiled.

WHITE COCHIN-CHINAS (*W. S.*).—Write to the parties we mentioned the other day.

MELON (*M. Binns*).—Your Melon, green-fleshed, pale-green-skinned, somewhat netted, flattened globe-shaped, very deeply ribbed, about six inches in diameter, and weighing four-pounds-and-a-half, had the most juicy, melting, and deliciously-flavoured flesh we ever tasted. It well deserved the first prize it had awarded at Bingley.

MILDEW ON GRAPES (*M. Morgan*).—Dusting with sulphur, and syringing with a weak solution of sulphuret of potash, are the only known remedies. If you will refer to some of the back numbers of our present volume, you will find what Mr. Errington says upon the subject.

ALTHÆA FRUTEX (*E. H. F.*).—This is now named *Hibiscus*. Your other query next week.

COCHIN-CHINA FOWLS ROOSTING (*D. W.*).—It is not unnatural for them to roost, but their wings are so defective, that they cannot fly up any height, and if enabled to mount up by a ladder, they are apt to maim themselves in leaping down. A bench with a top six inches broad, and raised a foot from the ground, is the best roosting place for them. Have the floor sanded, swept out, and fresh sanded every morning.

TAN-BED (*Simplex*).—You will see an article by Mr. Robson on the tan or bark-bed adapted to your case. You will there see that his description of one where cucumbers may be grown as early as by any other mode short of a hot-water-heated structure. If you wish (in addition to making your pit a forcing one in spring) that it should act as a greenhouse to your plants in winter, a small flue will be advisable, not but that many plants will live there by being covered up in severe weather, but that they will keep so much better by the application of a little fire-heat to drive out damp, which would only be increased by linings of a fermenting material like tan; but as you say the latter is plentiful around you, a tan-pit may be converted into a great number of purposes the whole year round.

MELTING WAX (*B. B.*).—When the wax is melted for the purpose of being poured into the moulds, it should be allowed to simmer, when the dross will rise to the top, and may readily be taken off with a spoon.

BARLEY SUGAR FOR BEES (*Ibid*).—This will cost to make about 5½d. per lb.; it should be made expressly for feeding bees, without any additional flavour. Any wholesale confectioner would be satisfied with 2d. profit, if a quantity is required.

TWO EGGS PER DAY.—Mr. Trotter, of Hexham Hill, says, "I am glad that the extract which you were so kind to insert in the THE COTTAGE GARDENER, from my Essay, has drawn forth notices from some of your able correspondents on the subject of Cochins laying more than one egg in a day. I doubt not our mutual object is that of making truth plain; but granting one hen in a hundred may lay two eggs in a day, once or twice in a season, I think it would be unfair to allow this to go forth to the public for anything more than it really is. It is with great reluctance I advance statements which would seem to detract from the value of *Mr. Richardson's* writings (viewing them, as I do, as having done more towards promoting the cultivation of poultry than those of any other gentleman): yet truth must prevail, and to allow the statement of Cochin hens 'frequently laying two, and occasionally three eggs on the same day,' to remain unquestioned, is likely to mislead purchasers of fowls, and to create disappointment, if not disgust."

VARIOUS QUERIES (*Z. Z.*).—*Root-prune* your apricots and greengages in October. There is no really good separate treatise on *Rose-culture*. Have you seen the essay upon it in *The Cottage Gardeners' Dictionary?* Six feet apart is a good distance between either *standard* or *half-standard Roses*, planted in a straight line by the side of a walk. *Salt to Asparagus beds* is best applied, a slight sprinkling at a time, about once a fortnight during the whole of the growing season, from March to the end of August.

FOOD FOR CHICKENS (*A Novice*).—If you mean for those just hatched, there is nothing better than barley-meal moderately moistened with milk, with each second day a few bread crumbs soaked in ale. Oatmeal groats *boiled*, and an egg boiled hard and chopped fine, shell and all, are excellent changes.

CHARACTERISTICS OF PURE COCHIN-CHINA FOWLS (*A. G.*).—No *tail feathers*, or rather a few scarcely distinguishable from those on the body; quill feathers so deficient in the *wings* that the bird cannot fly to any height; dense *fluffiness* of the stern and thighs; legs well-feathered, or *booted*, down the outside. These we consider essentials. Colour, weight, and symmetry are points of excellence, but the above we think essential marks of the pure variety. After the Birmingham Show, in December next, we shall have much more to say upon the subject.

HINTS (*J. B. R.*).—Thanks for your friendly suggestions. We must supply the requirements of all our readers, and you will see an announcement to-day of a sacrifice we are making in the endeavour to do so.

TAKING QUEEN BEES.—*J. W.* says:—"Replying to 'A Country Curate's' remarks in No. 204, I beg to assure him, that in stating I generally adopted the plan of putting the new swarm in the old stock's place, I did not intend to lay claim to the discovery, for I owe the knowledge, and much other useful information, to his interesting writings in THE COTTAGE GARDENER. I was induced to try the plan from reading his 'History of an Apiary' (page 277, vol. v.). I first formed three artificial swarms according to his method, and in this instance I took the precaution (after placing each artificial swarm in the spot the old stock occupied) of removing the old stocks to a friend's garden about half-a-mile distant; here they did so well, that in about a month I drove them again, as I considered the stocks too old to keep over another year, and each proved quite as large as a good second swarm. In the evening I fumigated, and united them each to its respective artificial swarm, previously taken from them. In two of them I captured the young (newly-born) queen, but could not discover the third. I united them by placing them over the box in bell-glasses (slightly sprinkling them), and they all united kindly, and proved good strong stocks. Since then I have put all my swarms (both natural and artificial) in the place of the old stock, and lately have only removed the old stock a few yards from its original position, and not even taken the precaution of stopping them in, but have contracted the entrance, and given them extra covering, and they appear to have done pretty well, considering the season. I find more advantages than one in this method; besides, the new swarm being larger, the bees go to work sooner, and there is no annoyance on the following day or two, from a quantity of bees flying round the spot where the swarm alighted, as there are sure to be when the swarm is left until the evening on the spot where they were taken. Finding two stocks, which I had removed from their places this summer (after producing natural swarms), rather short of bees, I have added some bees to them from two old stocks which I considered were getting too old to prosper. I tried to drive these old stocks, but failed, as the queens would not go up; so in the evening I fumigated them, and after taking their queens, united them (on the top of the box), with scarcely any loss of life. The stocks appear much strengthened, and I think will require no feeding this winter. I must say, I prefer this plan of disposing of the bees, driven (or fumigated) from old stocks that you wish to take in the autumn, to 'A Country Curate's' method of placing two or three lots together in an empty box (or hive), and feeding them until they have formed their combs and laid by their winter store, much as I respect his great experience in bee-management. I always look with interest for something from his pen, and hope he will tell us how he intends managing his bees during the next winter, and I hope another time to submit to him my plan, and have his opinion on it."

NAMES OF PLANTS (*Tirydail*).—The blue flower is *Lobelia syphilitica;* and the purplish-pink, *Chelone obliqua*, both excellent and old hardy plants. (*E. H.*).—The shrub is *Rhus cotinus*, or Venetian Sumach. (*A Lady Subscriber*).—The little variegated shrub is *Symphoricarpus vulgaris*, variety *variegatus;* the leaf is from a variety of the Common Ivy, *Hedera helix*, variety *digitata*. (*Evesham*).—Yours is the true Wormwood, *Artemisia absinthium*. (*H. M.*).—We cannot make out your plant, but will submit it to other parties.

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WEEKLY CALENDAR.

M D	W D	SEPT. 30—OCT. 6, 1852.	WEATHER NEAR LONDON IN 1851. Barometer.	Thermo.	Wind.	Rain in In.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
30	TH	Autumn Green Carpet Moth seen.	29.443 — 29.340	62—46	S.	—	1 a. 6	39 a. 5	6 a 54	17	10 8	274
1	F	Arbutus flowers.	29.290 — 29.012	60—40	S.	35	3	36	7 13	18	10 27	275
2	S	Horse Chestnut leaves fall.	29.388 — 29.298	58—45	S.	14	5	34	7 35	19	10 46	276
3	SUN	17 SUNDAY AFTER TRINITY.	29.577 — 29.440	61—49	S.	06	6	32	8 2	20	11 5	277
4	M	Horse Chestnuts fall.	29.485 — 29.462	64—43	S.W.	25	8	29	8 37	21	11 23	278
5	TU	Virginian Creeper red.	29.748 — 29.571	61—43	N.W.	18	9	27	9 19	22	11 41	279
6	W	Buntings flock.	29.774 — 29.677	61—40	W.	—	11	25	10 13	☾	11 58	280

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-five years, the average highest and lowest temperatures of these days are 63.3° and 44.1° respectively. The greatest heat, 80°, occurred on the 5th in 1834; and the lowest cold, 23°, on the 5th in 1850. During the period 90 days were fine, and on 85 rain fell.

BRITISH WILD FLOWERS.

CROWFOOTS—RANUNCULACEÆ.

(*Continued from page* 377.)

PÆONIA. PEONY.

GENERIC CHARACTER.—*Calyx* below seed-vessel, of five roundish, concave, reflexed, unequal, permanent leaves. *Petals* five, roundish, concave, spreading, contracted at the base, larger than the calyx. *Stamens* very numerous; *filaments* hair-shaped, much shorter than the corolla. *Anthers* terminal, erect, oblong, four-sided, of four cells. *Germens* from two to five or more, stalkless, egg-shaped, downy. *Styles* none. *Stigmas* oblong, curved, compressed, blunt, coloured. *Seed-vessels* (*follicles*) as many as the germens, long egg-shaped, spreading widely, leathery, bursting along the inner side. *Seeds* numerous, oval, polished, ranged along the edges of the follicle.

PÆONIA CORALLINA: Coral-coloured or Entire-leaved Peony.

Description.—*Root* composed of several oblong, fleshy knobs, connected together by strings, by which they are also attached to the stem. *Stems* about two feet high, cylindrical, unbranched, polished, reddish, leafy. *Leaves* twice three-leafleted; leaflets pointed-oval, usually undivided, dark shining-green on upper side, but slightly hoary beneath. The uppermost leaf sometimes has only three leaflets. *Flowers* crowning the stems, about four inches across, and composed of five or six large, roundish, crimson petals. *Anthers* yellow. *Germens* from two to five, joined at their base, covered with white down, and with purplish *stigmas*. *Seed-vessels* reddish, and polished inside. *Seeds* roundish, red at first, but changing to purple, and finally to black.

Places where found.—Old Gerard, in his "Herbal," says—"The male Peony groweth wild upon a cony-berry (rabbit warren), in Betsome, being in the parish of Southfleet, in Kent, two miles from Gravesend, and in the ground some time belonging to a farmer there called John Bradley." No other botanist has ever discovered it in the same place, but it was again introduced as a British Wild Flower, by Mr. F. B. Wright, in 1803, who found it growing wild in great profusion in the rocky clefts of the island called Steep Holmes, near the mouth of the river Severn. It is conjectured to have been there for ages, and two fishermen stated that they had gathered its flowers 60 or 70 years previously to Mr. Wright's discovering it.

Time of flowering.—May and June.

History.—This is the *Pæonia mas*, or Male Peony, of our old botanists, but both it and our common garden Pæony, which they called *Pæonia fœmina*, or Female Peony, bear both stamens and pistils in the same flower, belonging to Polyandria Pentagynia of the Linnæan system. The genus *Pæonia* was so named by the ancients in honour of *Pæon*, a physician, who cured the wounds received by the heathen gods during the Trojan war. From him physicians were sometimes called *Pæonii*, and the herbs employed for medical purposes, *Pæoniæ herbæ*. The ancient writers, who transformed simple facts into fabulous histories, for the purpose of deifying favourite mortals, relate that Pæon, who was a pupil of the great Æsculapius, first received the Pæony on mount Olympus, from the hands of the mother of Apollo, with which he cured Pluto of a wound he had received from Hercules; but this cure created so much jealousy in the breast of Æsculapius, that he secretly caused the death of Pæon. Pluto, however, retaining a grateful sense of his service, changed him into the flower, which ever after bore his name.

Old herbalists state that the roots are celebrated as remedial in disorders of the head and nerves. They state that twelve grains of the dried root, if persevered in for some time, are of great service in all nervous disorders, head-aches, and convulsions; prevent the recurrence of the night-mare, and remove obstructions in the liver. Mr Withering says:—"Few aquatic excursions of a day can prove more interesting to the naturalist, especially the geologist, ornithologist, and botanist, than a sail from Bristol, through the romantic pass of St. Vincent's rocks, to the Holmes Islands. The Steep Holmes represents the rugged truncated apex of a submarine mountain, whose abruptly precipitous sides are only accessible at one proper landing-place. Amidst the shelving rocks and loose shingly stones, a few hundred yards from, and at an elevation of nearly one hundred feet above, this spot, at the eastern end of the island,

'There may ye see the *Peony* spread wide,'—

together with the scarcely less rare *Allium ampeloprasum*, as the Editor had the gratification to behold in June, 1826. The latter plant has effected a lodgment below the lighthouse on the Flat Holmes, but the Peony is altogether peculiar to the sister island, and how far it may be deemed an aboriginal, strictly indigenous, or derived fortuitously from some wrecked Levanter, or possibly, though not probably, escaped from the little enclosure, whose ruinous walls and few remaining vestiges seem

'To mark where a garden had been,'

must remain problematical, so far as our investigations are concerned; no vessel having been stranded within the memory of man, nor any inhabitant dwelt thereon, save the

solitary fisherman who makes the crazy hut his cheerless abode, and that only through the dreary season of winter. The Peony also extends over the crests of the northern precipices, but the herbage more general consists of the gigantic *Smyrnium olusatrum*, *Lavatera arborea*, *Hyosciamus niger*, and a brush-wood of *Ligustrum vulgare*. The seeds have been strung and worn round the neck as beads, ornamental from their beautiful colour (whence, probably, the specific name), and, in a more credulous age, not without reference to certain cabalistic purposes, as a *Fuga Dæmonum*, and protector from the powers of darkness." (*Smith. Martyn. Withering. Gerard. Phillips.*)

RENEWING our history of the Potato from the date where we concluded last week, we find that Potato cultivation spread rapidly in Ireland; and it became established, it is said, in Lancashire, and that portion of our northern coast still celebrated for its culture, owing to some being on board a vessel wrecked upon its shore. Yet the value of the root was not generally known at a still later period; for in a time of scarcity, namely, in the March of 1663, it required to be recommended as a crop of national importance, in a letter addressed to the Royal Society.* The writer of this letter was Mr. Buckland, a Somersetshire gentleman; and the recommendation was referred for consideration to a committee of the society. The report of that committee was favourable, and the society not only urged its cultivation to landed proprietors, but requested Mr. Evelyn to enforce the society's opinions in his "*Sylva*," then publishing under its auspices, although it was no favourite with him, for 1664, in his "*Kalendarium Hortense*, he says, "Plant potatoes in February in your worst ground." Before the "*Sylva*" appeared, namely, in 1664, was published a pamphlet, the first devoted to the subject of cultivating the potato, and bearing this prolix title—"*England's happiness increased, or a sure and easy remedy against all succeeding dear years, by a plantation of the roots called potatoes, whereof (with the addition of wheat flour) excellent, good, and wholesome bread may be made, every year, eight or nine months together, for half the charges as formerly. Also, by the planting of these roots,* 10,000 *men in England and Wales, who know not how to live, or what to do to get a maintenance for their families, may, of one acre of ground, make* £30 per annum. *Invented and published, for the good of the poorer sorts, by John Forster, Gent., of Harslop, in Buckinghamshire.*" He says that the potatoes he recommends for general cultivation "are the *Irish potatoes*, little differing from those of Virginia, save only in the colour of their white flowers. These roots, although they came at first from the Indies, yet prosper well in Ireland, where there are whole fields of them, from whence they have been brought into Wales and the north parts of England, where they likewise prosper and increase exceedingly." He recommends a dry, well-drained soil for them, to be enriched with dung if necessary. Planting in March, with tubers cut into quarters or halves, to be buried six inches deep and eight inches asunder. The roots, he says, may be begun to be taken up in September, and as wanted until March; so that even then it was known to the cultivators that the colds of winter would not destroy the tubers; and Mr. Forster further adds, that the very small roots must be left in the ground to produce a crop the next year. In conclusion, he gives directions for making potato bread, potato biscuits, potato pudding, potato custards, and potato cheesecakes. The produce from good ground was three or four heaped bushels per rod. No one, he says, will grudge for them a shilling per bushel. Mr Foster then considers the growth of potatoes as a political question, and recommends the King, Charles the 2nd, to order an importation of the root from Ireland; and that every man in every parish shall grow an acre or two; and that, out of every £30 worth grown in a parish, £5 shall be paid to the King! He concludes by stating how the potato may be raised from seed instead of from the root.

Notwithstanding the widely-disseminated opinions of the Royal Society, and these published appeals to the public, the introduction of the potato, as an object of cultivation, was extremely slow.

Worlidge, in 1687, although he remarked that the potato was then common in some parts of the continent, merely suggests that they may be useful for swine or other cattle.

Houghton, writing in 1699, says, they were then very common in Lancashire, being introduced from Ireland, and that they begin to spread over England. The roots were boiled or roasted, and eaten with butter and sugar! (*Collections* ii. 468.)

Sharrock, Ray, Lisle, Bradley, Mortimer, &c., writing at the close of the 17th, and early in the 18th century, make most slighting mention of the potato, and even Miller, in the 4to edition of his Dictionary, published as late as 1771, only mentions the same two varieties, the red and the white tubered, which had been noticed by writers a century his predecessors.

Salmon, who wrote in 1711, speaks of the *Virginian*, and the *English*, or *Irish potato*, as distinct kinds, though his description shows their identity—the only difference being, that the colour of the skin of the tubers of the first was dirty white, and of the second, red. "They are only nursed up in gardens in England and Ireland, where they flourish and come to perfection, prodigiously increasing to a vast plenty. The roots are boiled, baked, or roasted."—(*Salmon's Herbal*, 905.)

London and Wise, in the seventh edition of their "*Compleat Gardener*," published in 1719, do not even mention the potato (but it must be remembered that this is only an abridged translation of M. Quintinye's work, published some years previously). However, even as late as about 1770, the potato was not known generally in the south-western counties. The late president of the Horticultural Society, writing in 1831, when he was seventy-two years of age, says—

"I can just recollect the time when the potato was

* Although not extensively cultivated, yet it began to be esteemed; for, in 1655, Muffet observed, that even the husbandman bought its roots to please his wife.—(*Health's Improvement*). There was some sly allusion in this; for Parkinson, in 1656, observes, that the potato "was foolishly called the apples of youth;" and Shakspere makes Falstaff include it in some of his wanton ribaldry.

unknown to the peasantry of Herefordshire, whose gardens were then almost exclusively occupied by different varieties of the cabbage. Their food, at that period, chiefly consisted of bread and cheese, with the produce of their garden, and tea was unknown to them. About sixty years ago, before the potato was introduced into their gardens, agues had been so extremely prevalent, that the periods in which they, or their families, had been afflicted with that disorder, were the eras to which I usually heard them refer in speaking of past events; and I recollect being cautioned by them frequently not to stand exposed to the sun in May, lest I should get an ague.

"The potato was then cultivated in small quantities in the gardens of gentlemen; but it was not thought to afford wholesome nutriment, and was supposed by many to possess deleterious qualities.

"The prejudices of all parties, however, disappeared so rapidly, that within ten years the potato had almost wholly driven the cabbage from the garden of the cottagers."—(*Knight's Papers*, 319.)

Mortimer's "*Whole Art of Husbandry*," was published in 1707, and a sixth edition in 1761, and in these the potato is dismissed, after a brief notice of ten lines, about half of which are occupied with these observations:—"The root is very near the nature of the Jerusalem artichoke, but not so good or wholesome. These are planted either of roots or seeds, and may probably be propagated in great quantities, and prove good food for swine!"

One reason, certainly, that the plant remained so long in disrepute, was the defective mode of its culture. This, and ignorance of the proper mode of cooking the tubers, would make them certainly anything but a tempting article of food. The following anecdote illustrates this:—"A person, who had been invited to taste the first potato planted in his own country of Forfar, N.B., about the year 1730, related that the roots had been merely heated, and that they adhered to the teeth like glue, while their flavour was far from agreeable. The food was thus about to be condemned, when the accidental arrival of a gentleman, who had tasted a potato in Lancashire, caused the rejected roots to be remanded back to the hot turf ashes till they became as dainty as they had before been nauseous."

According to the old statistical account of Scotland, potatoes were first cultivated in the field there in the year 1739, in the county of Stirling; and Dr. Walker assures us, that they were not known in the Highlands and Isles till 1743. It is stated in the General Report of Scotland (vol. ii. p. 3.), as a well-ascertained fact, that in the years 1725-6, the few potato plants then existing in gardens about Edinburgh were left in the same spot of ground, from year to year, as recommended by Evelyn; a few tubers were perhaps removed for use in the autumn, and the parent plants well covered with litter, to save them from the winter's frost. Notwithstanding the success that, after this period, attended the culture of the potato among the cottagers, its progress among the higher classes in Scotland was retarded by the opinions of different writers on agricultural subjects, already mentioned; and also, what is not a little singular, a mistaken zeal in religious matters made some of the Scotch folks hostile to the innovation. 'Potatoes,' said they, 'are not mentioned in the Bible!' and this was deemed a quite sufficient reason for rejecting them. Famine, at last, gave the great impulse to the cultivation of this root, and during the latter part of the eighteenth century its excellent qualities became generally understood."—(*Quart. Journ. of Agric.*)

We have republished this memoir of the potato, because we are told by some prophets of evil, that this source of food is rapidly becoming extinct, and we have, therefore, endeavoured to secure a full and correct biography of the departing plant! However, having done this, let us call to remembrance that it is not *quite* gone—and some will be such good hopers, and among these we confess to be ourselves, as to believe the time will come when years of murrained potatoes will be rare, and years of healthful crops usual. We found this opinion upon many facts, amongst which we will only mention that, in high northern latitudes, in New Zealand, and in the districts of South America, of which the potato is a native, the disease is unknown; and in Europe, every year some districts are unvisited. It is, therefore, not a plant to which the time of extinction has come. Indeed, we know of no *species* that has such an allotted time. *Varieties*, probably, are less enduring; but then fresh varieties may be raised to succeed their predecessors. It is true, that new varieties have been found as liable as the elder varieties to the disease in England; but this proves no more than that there are some circumstances, at present undiscovered, which occasion the disease in the temperate regions of Europe,—circumstances not constantly nor universally in operation, because in some years, as in 1850-51, the disease nearly disappeared, and even in the years when this murrain most widely prevails there are districts in which it does not break out; even in two neighbouring fields, the potatoes are known in the one to be almost destroyed, and in the other to be scarcely injured.

We have received the following letter, relative to this deeply interesting subject, from the same highly intelligent correspondent, whose communication we published at p. 328, and we must conclude by recommending it to the attention of our readers, with the few notes we shall append.

"When I said that my farmer's potatoes were better than mine, you ask if they were not 'different varieties.' His potatoes were of the *Early American* kind, and so were a part of mine; but I generally plant three or four sorts, hoping that if one should fail another might succeed; but his were better than *any* of mine. Again, when I say that the later-planted potatoes in my garden were better than the earlier ones, you ask if they were 'the same varieties;' and I answer—the two samples spoken of were both *Forty-folds*. But I will give you another instance of my experience in potato culture, in support of my opinion. About seven or eight years ago, when I was living in the neighbouring county of Durham, and when we were all considering how we should destroy or escape from the disease, which had then but a short time appeared, I read in several of the newspapers that the best way was to plant in autumn, and, as I was always fond of trying experiments, I determined to

try this; and so I planted half my crop in November, and the remainder about March or April next spring. They were both my favourite *Forty-folds*. Well, when summer came, and we began to dig early potatoes, I observed my gardener take up from the bed that had been latest planted, and I asked him why he did not take those that had been put into the ground in autumn. 'Because,' he said, 'these are by far the best and the largest.' Now, I never depend upon mere hearsay, and so I examined for myself, and I found his words to be true, and I have never planted potatoes in autumn since. But, indeed, I am beginning to distrust all attempts to save this vegetable, and, like my sturdy farmer, to pay no attention to 'them men who writes in books about such things.' Not for the same reason by which he was influenced—thinking that 'he knew better than any of them'—but because I think we are all equally ignorant of both the cause and the remedy. The time was when we could hardly do wrong: no manure, or any sort of manure—new soil or old soil—rich land or poor land—early-planted or late-planted—the tubers were all sound, although of different qualities, according to the advantages they each had. But how is it now? Every man has a scheme to recommend; but, do what you will, the potatoes, under every sort of management, are diseased. I have planted various kinds with stable manure, and ash-pit manure, and peat and dung mixed, and peat alone, and rotten leaves, and no manure at all; and yet I this year see little or no difference: all are diseased to the extent of perhaps three-fourths of the crop. You are, however, not to suppose that our Westmoreland soil is not good potato soil; on the contrary, it has been thought by many to be the finest in England for that crop. It is the light deep red soil that has always been considered the best for barley, and oats, and turnips, and potatoes; and farmers from the neighbouring counties used to send to us for seed. But I fear the plant is leaving us, and that no great difference will be found in any part of Europe. We may, however, although without much hope of success, try what we can to preserve it; and my advice is—plant as late as you can, ripen as quick as you can, and take up as early as you can; for I find the longer they are in the ground the worse they are. It seems to me to be a mistake to suppose that planting early will make the root ripen early. The fact may be that the seed is making less progress in the cold ground during winter than in the warm and sheltered place where it is housed. You say that we are to use no manure, and complain that I used it in my farmer's field; but you are to understand that with us, the potato crop, like the turnip crop, is only preparatory to a crop of corn, and the same manure serves for both. It is true that the potatoes might be planted without manure, and a sufficient quantity given afterwards to remunerate the farmer for the use of the land; but that is not the way here, and you know how difficult it is to turn farmers out of their old ways. I told another of my farmers that you said we ought to plant no varieties that would not ripen, and be ready to store, by the middle of July. He smiled, and said, 'That is very right, but where are we to find potatoes that will ripen in our part of the country by the middle of July?" The fact is, that is the time when we are beginning to take up our early half-grown potatoes; and now, in September, we are taking up the ripe ones, and this is quite as soon as they are ready. Much has been said about long-cultivated or worn-out soil, and fresh soil that has never felt the plough. Well, one of my neighbours has got in his farm some pasture land that stands rather high, and had never been ploughed, and he thought to escape by planting his crop there. About a fortnight ago he told us that his potatoes were all sound; but I, being rather sceptical, desired my gardener, two or three days ago, to examine them, which (being a liberty I could safely take) he did; and he took up a single root, at which there were about eight well-sized tubers. He brought home six that were all diseased, and two that he considered sound he left behind. The next day we told our neighbour what we had done, and he said, 'Ah, sir, when I saw them a fortnight ago they were all right, but now they are all wrong.' There is another remark, which my cook made to me yesterday, and which it may not be amiss to repeat for the benefit of some of your readers. 'Sir,' said she, 'we must always take care that no bad potatoes are put into the kettle with the good ones, for if they are boiled together they all taste bad alike.'

"Thus far have I said all that occurs to me at present upon the culture of the potato, and in reading what I say, I must request you to consider the difference between our climate in the north and yours in the south, and tell us what we ought to do, who cannot get ripe potatoes before August and September; for we like them as well as you do.

"If you think your readers will not be weary of my prosing, and you do not begrudge the space that my letter will occupy, I will now venture to call attention to a very different view of our subject, but which appears to me to be as valuable, and far more interesting, than anything we have hitherto said. I think I am correct when I say, that the potato disease did not appear before the introduction of guano into this country, and I have sometimes thought that we owe our misfortune to that foreign manure. For my part, I believe that the leaf is struck by some new insect, which inoculates the plant, as it were, with a fatal disease: the virus circulates with the sap, and carries rottenness down to the tuber, which perishes; and I think it very possible that the eggs may be mingled with the guano that is now so universally used. 'Ah, but,' say some cavillers, 'who has seen the insect? Show it to us, and we will admit the probability of your theory.' Alas! who can trace the footsteps of the Almighty, or calculate the extent of His wisdom and power? Geologists will tell you that some of our hardest flints and rocks are principally composed of insects so minute, that it would take a million to cover a space occupied by a grain of sand. These, without instruments, are invisible to human sight, and yet contain muscles, and nerves, and digestive organs, and are the food of other insects larger than themselves. And they too, no doubt, prey upon others still less, and so we may descend in the scale of creation till we are wholly bewildered, and can reason no longer; and yet the very smallest of these insects may contain a poison, and a fecundity sufficient, in a very few years, to consume or wither up every green plant in our country. Read what some travellers say of the devastation occasioned over hundreds of miles of forest, in a few weeks, by insects suddenly brought upon them. Then let me be no longer asked to shew the instrument by which the Almighty works, either for our solace or our punishment. 'Behold I go forward, but He is not there; and backward, but I cannot perceive Him; on the left hand where He doth work, but I cannot behold Him; He hideth himself on the right hand, but I cannot see Him.'

"But yet the Almighty permits us—nay, challenges us—to reason with Him; and I may very fairly be asked what I conceive to be His motive for so suddenly depriving us of this most valuable article of food. This, however, is holy ground upon which we are now treading, and we must act with great reverence and befitting humility.

"I believe that Cobbett used to say, the potato was the poor man's curse. Now, I believe that all God's good gifts are intended as blessings; but may we not turn the blessing into a curse, as we do in many other things which He has given? The potato is an esculent that used to be of very easy production, and contained all that was necessary to maintain human life; and when men could, by a few weeks labour, procure what was sufficient to support them and their families for a year, they were satisfied, and spent the remainder in idleness; idleness led to mischief, as it usually does; and thus they turned God's blessing into a curse. Now, I ask, has not this been the case in other countries, and was it not advancing rapidly to the same point in our own? And may not God say to His ministering agents, 'Remove this stumbling-block out of their way?' Yes, He may say it in love, and in pity, and we may have reason to thank Him for His salutary chastisement. And if the fiat of the Almighty be gone forth, He will mock at all our puny efforts to counteract His will, and we may lose entirely the blessing we were not worthy to retain. But we may, perhaps, not improperly carry our speculations into a very different course. I believe we are on the eve of a great crisis in the world's affairs, and that God is making all things, small as well as great, to work together in forwarding His great purpose. The millions of acres throughout the globe that have hitherto been untrodden by man, or occupied by the degraded and idolatrous savage, it would seem are now to

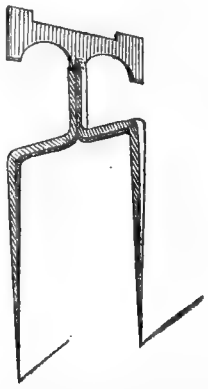
be peopled by a race capable of understanding and obeying the precepts of the Gospel, and through their means Christianity, according to the Word of God, will cover the earth as the waters cover the sea. The Anglo-Saxon race seems to be God's principal instrument to perform this work; for we see them, as if they were the real descendants of Abraham, to whom the promise was given, spreading like the sand upon every shore. And is it not extraordinary, that wherever the white man plants his foot, the savage recoils and retreats before him, and wastes away, till, as in numerous cases, the mere fact that he ever existed is found only on the recording pages of history. Let us now see how this applies to our subject. Nothing but necessity will drive most men from their homes and their country, and we have seen how the potato has enabled ours, both English and Irish, to live in degraded sloth, and how the Almighty has removed from us this stumbling-block. Now, then, the food that cannot be obtained at home they are obliged to seek in other countries; and thus we behold hundreds of thousands flocking to the sea-ports, and shipping themselves off to people the waste lands I have described, driven by God's agent, the potato murrain. This, however, was not sufficient, and He employs a bait as well as a scourge, and He says, let the lands be scattered over with gold dust, and what starvation cannot accomplish the lust for gold will. Oh! how inscrutable are the ways of Providence, and how clearly may the close observer see that nothing is too great, nothing too small, to be made an instrument in God's hands; and it becomes us all to bow humbly before Him, and say, Thy will be done, and not ours.—J. C——n."

Most unreservedly do we record our assent to this evangelical view of the good purposed to arise out of the evil, but we must, at the same time, express our equal conviction that we may gather the great comfort from such view, that when the murrain has completed its mission it will pass away. We are justified in thus concluding, because we find precedents for such conviction in the Bible—"I smote you with blasting, and with mildew, and with hail, in all the labours of your hands;"—but it is added, when the intention of the chastisement was realised,—"from this day will I bless you." Above all, although the "blasting" is upon our potato crop, let no one shrink from cultivating it, for no one can pre-determine when the plague will be stayed. Although the "blasting" had smitten the plantations of the Israelites, yet they continued their exertions—the vine, the pomegranate, and the olive were still the objects of their hopeful care, and then came the assurance,—"from this day will I bless you." This, added to our own experience, and the experience of many others, makes us wish that our correspondent had not given up early planting until after further trial and further failure. Had we known that he resided in the wettest of all the counties of England, we should have recommended him, and do now recommend him, to keep his seed potatoes between layers of sand, or coal ashes, in a dry shed until February, and then to plant. Let him plant none but the very earliest ripening varieties, and if he will cultivate no other than the *Walnut-leaved Kidney*, *Fox's Early Delight*, and the *Hopetoun Early*, all of which he may obtain from Messrs. Lawson, of Edinburgh, we think he may take up his crop ripe at the end of July, even in Westmoreland. These varieties are all first-rate in quality, and, though not such productive bearers as the *Forty-fold*, are much more likely to escape from the disease.

GOSSIP.

Referring to some *Garden Scrapers* of which we gave drawings last February, Mr. G. S. Wintle, of Gloucester, has written to us as follows:—

I send you a drawing of mine, believing it to be better than either you mention, for the following reasons:—In your Fig., No. 1, I object to the wooden leg and iron ferrule, and in No. 2 to the extra leg, and way of fixture of the scraper in the shoulder, as being liable to become ricketty, and out of its purchase. Mine, you will perceive, is held together by two rivets; the lower part, below the rivets, to the shoulder, being hammered close together while the iron is hot. The head of the scraper being rivetted to the legs, a perfect steadiness is obtained when fixed in the ground.



Length of feet, 17 inches; length of scraper, 9¾ inches; total height, 25 inches; total weight, 5½ lbs.

A press of other subjects has hitherto prevented our noticing the *Liverpool Horticultural Society's Show*, which took place on the 2nd of this month. Mr. Errington, who was one of the judges, says:—

The chief feature of the exhibition tables was *the fruit*, which surpassed all I ever saw there in quantity and excellence; surely our neighbours from the continent who were there would take home a very favourable impression of the British gardeners' skill and perseverance. Space will not permit me to make honourable mention of the winners of prizes, but I may point to a few good things in the plant way. There were fine specimens of Allamanda, Witsenia, Stephanotis, Tritonia, Crowea, Echites, Cyrtoceras, Œschynanthus, Liliums, Mussœnda, &c., and a collection of trained stove plants, of gigantic stature, from Mr. Thomas, gardener to C. Wilson, Esq., would not have disgraced the Chiswick benches. Roses were inferior: I am astonished that they are not better done in a neighbourhood so famous for its gardens. There was a splendid specimen of the *Testudinaria Elephantipes*, or Elephant's foot, one of the most grotesque plants in existence. Geraniums, as might be expected, were on the wane, and Ericas rather scarce. The Orchids were rather inferior. Liverpool should produce better things in this way, after the immense advantages they have so long enjoyed as to obtaining importations. Florists' flowers were abundant, and of good quality; and Exotic Ferns, in considerable quantity, showed plainly that the taste for these is on the increase. It may be here named, that the rare *Lapageria rosea* graced the tables; for this the Show was indebted to Mr. W. Skirving, the eminent Nursery and Seedsman of Liverpool, to whom the agricultural world, both here and abroad, is indebted for our present superior breed of Swede turnips. Prizes were given for British plants properly labelled, and their localities given. A great impulse appears to be given to the manufacture of wax flowers, if we may judge by the increased quantity produced; there were three or four exhibitors, and their productions characterized by much merit, but, as before, Miss Newton bore off the principal prize. Great credit is due to Mr. Leatherbarrow, the very active Hon. Sec., for the clever arrangements, and for taking every means to place the awards of the Judges beyond the possibility of suspicion. Long may this Society prosper!

Messrs. J. Weeks and Co., King's Road, Chelsea, inform us, September 17th, that their *Victoria regia*, in the *open heated pond*, had just commenced flowering.

The following is a list of the *Horticultural and Poultry Shows* of which we are at present aware. We shall be obliged by any of our readers sending us additions to the list, and giving the address of the Secretaries.

HORTICULTURAL SHOWS.

BURY ST. EDMUNDS, Nov. 26 (Chrysanthemums). (*Sec.* G. P. Clay, Esq.)
CALEDONIAN (Inverleith Row), Edinburgh, Dec. 2.
HAMPSHIRE, Nov. 18 (Winchester). (*Sec.* Rev. F. Wickham, Winchester.)
LONDON FLORICULTURAL (Exeter Hall, Strand), Oct. 12†, Nov. 9†, 23, Dec. 14†.
NORTH LONDON, Nov. 23, Chrysanthemum.
SOUTH LONDON (ROYAL), Oct. 14†, Nov. 11†, Dec. 9†, 16.

POULTRY SHOWS.

BIRMINGHAM AND MIDLAND COUNTIES, 14th, 15th, 16th, and 17th December.
BRISTOL AGRICULTURAL, December 7th, 8th, and 9th. (*Sec.* James Marmont.)
CORNWALL (PENZANCE), about a week after the Birmingham. (*Secs.* Rev. W. W. Wingfield, Gulval Vicarage, and E. H. Rodd, Esq.)
DORCHESTER, Nov. 18th. (*Sec.*, Mr. G. J. Andrews, Dorchester.)

† For seedlings only.

SELECTION OF FRUIT TREES.

WE spoke a while back about early autumn planting of fruit trees, and we now beg to offer a little farther advice on this subject. "First come, first served," is a trite maxim, and very true in this case, or applied to those who have to purchase at the nurseries. The very best plan is to prepare the holes or stations betimes, some time in September; and, indeed, to have everything ready for the tree to be placed in the hole; then, about the second week in October, to proceed to the nursery, and not only select, but bring away, the trees. This is sometimes awkward on account of distance, but in most cases it may be carried out. We have, before now, known some unlucky rogue shift the nursery mark to an inferior tree, in order to secure to himself the advantages that belong of right to the first comer.

The principles of choice are few and simple, being comprised under such heads as follows:—

1st. Healthy wood.
2nd. Eligibility of form.
3rd. General condition of the tree.

As to the first, most persons would have guessed it; but it must be understood that by health we do not mean excessive luxuriance. There is a sort of medium condition in trees which is by far preferable. However, much depends on the kind of tree; that which would be a matter of recommendation in a standard Apple tree for an orchard, would, in the eyes of a knowing treeman, be just the reverse in a Peach or Nectarine. But in all cases, excepting those of the ordinary orchard, a tree of moderate character, possessing stout wood, with compact joints, is the best. Where there is one rampant leading shoot, it must be remembered, that such has been reared at the expense of the vigour of the surrounding parts; it is, in fact, aiming to attain the degree of liberty assigned it by nature, when surrounded by the natural conditions. When, however, a tree is to be selected for orchard purposes, as a Pear, or an Apple, it is, of course, indispensible to choose a tree of this character, and if not already trained, to take means to induce the character requisite. Trees, also, for the pyramidal mode of training, require a good stem, and those which are termed half-standards or riders.

By our third heading we have to consider "eligibility of form;" and by this is meant more the character of the head or branches, than that of the stem; that is to say, its adaptation to a given purpose. Such purpose may be a trained tree for a wall or fence, for a table trellis, an arcade, a saddle trellis, a dwarf standard, &c., &c.; but whatever the design may be, an eye should be kept in the selection to the ultimate character required. If a trained tree for the wall or fence, folks generally select one that has been two years under training; and this, indeed, is the thing we would recommend to all who feel desirous of enjoying their fruit betimes. "Hope deferred maketh the heart sick;" and to few things does this maxim better apply than to the expectant cultivator, who, of course, thinks it no small affair to build expensive walls, or other boundary fences, to make due provision for the roots, and to purchase trees at some cost, in order to carry out his designs.

Now, in selecting a two years-trained *Peach, Nectarine*, or *Apricot*, the attention should be first directed to the balance of strength; all other matters being right, that tree should be selected which has the greatest equality in the branches, in point of strength; especially one that has stronger shoots at the lower than the upper portions. A mere rustic, employed on a farm, or in a garden, knows full well that with a hedge, intended as a permanent barrier against trespass, a provision must be made betimes for the stability of the lower portions; and just so with the tree. If well-placed and well-formed lower limbs be not found within the first three years of its training, it is almost vain to look for them afterwards: nothing but the management of a master-hand in training affairs can bring things to the desired issue. Above all things, we do abhor a young trained tree with weak side-shoots and a gouty over-fed centre—a great coarse shoot, which carries evident marks of having fattened at the expense of its poorer neighbours.

There are those who, for mere economy's sake, or for the sake of training from the first on certain principles, choose to plant a "Maiden," that is to say, one only a year old from the bud or graft. Now there is no harm in this; only it requires more patience to await the produce. When such are chosen, the choice should fall on one that has no gum or blemish whatever; neither any decay visible in the extreme points of the shoots, and, as we like them, one that shows a tendency to root upwards.

It ought to be here observed, that when the tree to be selected is of greater age, it is well to select it on the score of strength, as well as symmetry; for, be it understood, that the older a tree is, the less objection should there be to luxuriance; indeed, in almost any fruit-tree more than five years old from the bud or graft, the stronger the shoots the better; providing they are tolerably equal in point of strength.

The purchaser should always see to the removal of his own trees, for many a mishap may occur in the removal of fruit-trees—those termed the stone-fruits especially. It sometimes happens, that the men employed to remove the trees in nurseries are either clumsy or careless, and it is well to have an eye to their proceedings, for the stems may be galled, or the roots sadly mauled by inconsiderate workmen. In removal, great care should be taken to avoid galling the roots with the spade: ordinary workmen think it sufficient if they avoid cutting them, but there is by far more injury done by bruises than by excision.

The next thing is to provide that the roots never become dry, for a moment, from the time they leave the ground until the tree is planted. This is easily managed

if the mind be set upon it. Wet half-worn mats, wet litter, &c., will accomplish this with attention. Of course, the buyer will not select gummed or cankered trees, or, indeed, those diseased in any way; and, above all, if Apples, shun those infested with the American blight. R. Errington.

THE GARDEN OF THE LONDON HORTICULTURAL SOCIETY—September 15.

For the last four or five years I had very little opportunity of examining this garden in detail, and, with one or two exceptions, about a dozen years back, I never had a right view of it in September, or later than the July exhibitions, and exhibition times, we all know, are not the best for making the most of such information as may be gleaned in this great establishment. I have now examined it more minutely, and the first novelty which took my attention was the specimen of the new *Glass-walls*, as they are called; and certainly, if they answer as well as they are beautiful, they will be well worth all the trouble and expense. But, looking on gardeners and gardening as a class and calling, their free intercourse of thought and opinion, their cheap books and periodicals, and, above all, the superior and more general knowledge to which they have obtained, as compared with other crafts having far superior means of improving themselves in these respects, through having more leisure time on their hand, and far better remuneration for the time they are in harness, I say, looking at all these circumstances, it is difficult to believe that they will ever patronise such things and projects as are under the controul of the evil genius of the patent laws, as administered in our time and country. When the models were first exhibited last spring, I gave an idea of their form, and the capacity of the space inclosed, which may be thus repeated—a row of iron posts, nine or ten feet high, with arms on either side, herring-bone fashion, then strings of wire running from arm to arm the whole way to train plants against, and these to be guarded on both sides by upright glass sashes, and these sashes to move backward and forward with machinery, so easy to work that a child might move long lengths of them by turning round a handle like that of a coffee-mill; one short pane of glass, leaning from the top of each side-wall, meet in the centre, thus forming a hipped roof to the whole. These roofs, as well as the sides, can be opened at pleasure. The specimen put up in this garden represents a garden door with a good stretch of glass on either side of it. To heighten the beauty of the structure, a very chaste and simple parapet of iron in scroll work runs along the top on either side, and this hides most of the ridge or roof. Altogether it is most beautifully put together, and looks remarkably well. The only point that struck me, at the time, as an oversight or fault, is that in the grooves in which the sashes slide, and the uprights which hold them together, too much space is left for the working of the sashes, and, if I am right, this will cause a dreadful rattling noise on a windy night. Reader! did you ever sleep in a room where the windows had play enough to keep rattling on a windy night? a feat I never could accomplish. It will not be thought strange, therefore, if I give up my old custom of sleeping on Turnham Green the nights before the shows, until I learn how the glass-walls in the society's garden behave themselves in stormy times. In one of the divisions, or on one side of the door, fruit trees are to be tried, and, on the other side, flowering plants will put the whole to the test. These things have been recently planted, but as no effect could yet be expected, I did not look what kinds they planted. I am very glad indeed that the Council of the Society had determined to try these experiments, and if they should fail altogether, the expense will be as nothing to that which was once incurred in this very garden, and at Regent-street, in making out lists and reports to the secretary of all the Tom-foolery, and worse than foolery, about every weed, man, woman, and child, in the garden even, and of every opinion expressed by visitors, and such things, got at by *a regular system of low, mean, and scandalous espionage.* Any one who had known how this part of the Society's, or rather of their ambitious secretary's business was transacted before 1830, or who read of them when the whole was brought to light and smashed to atoms at that time, need not express wonder at the difference in the times when the Hon. Arthur Wellesley entered the army, and when we lost him as our Noble Duke.

But to our cabbages. *Fitzroya Patagonica* is planted out here on the grass, and promises to be as fast a grower, and as distinct a plant, as the *Taxodium sempervirens.* I cannot say so much of His Royal Highness *Saxe-Gothæa conspicua* after this interview. But who can distinguish the differences, or predict the characteristic features of the future conifer, now planted out for the first time, when we see, as one may do in this garden, the Indian *Deodar* assuming the dense habit and well-known features of the *Cedar of Lebanon?*—who, indeed, but the man of science? This, however, being Mr. Appleby's new theme, I shall not dwell upon it further than to make a note or two now and then, and first, upon the great mistake into which some have fallen about *Cupressus Lambertiana*, of Gordon, and *C. macrocarpa*, of Hartweg. I have already explained how these two names for one plant got into circulation; and some have said that I might as well suck my thumb as try to establish their identity, therefore, I made it a point, in this visit, to clear up this doubt, or else suck my thumb to the end of the chapter. After examining many full specimens of both growing in the same garden, and even after seeing dried specimens of the fruit gathered in California, I am quite sure that the story, as reported by Mr. Gordon himself, and given out in our journal, is quite correct. The reason why some people erred is easily accounted for thus:—There were no more seedlings of Mr. Lambert's plant in the country at the time, except the few got by Mr. Gordon, therefore it was necessary to increase them from cuttings, until Mr. Low, of the Clapton Nursery, got a supply of the seeds,—I believe, through Fischer, from Russia,—and also those sent home to the Society by Hartweg, from California. From these sprung seedlings, which could not be distinguished from those got from Mr. Lambert's seeds; and Mr. Hartweg's name, *macrocarpa*, being published before, Mr. Lambert's name was held only as provisionally, and *Macrocarpa* is the true and legitimate name. After a while, plants reared from the wild seeds, and those increased by cuttings, began to assume different characters; the former growing upright, as all seedling Conifers do, and the plants from cuttings taking a more spreading-out growth; and very likely these two forms of growth will keep constant until the upright ceases to grow with old age. There are original plants from the first seedlings, and plants got from the same by cuttings, growing side by side in this garden; and two as distinct habits are thus established from one and the same seed, as if the plants were two distinct species, therefore, it is only charitable to allow that this was quite sufficient to mislead the best of us. Indeed, it is well worth while, for those who can afford space enough, to plant a real seedling and a cutting plant of *C. macrocarpa*, and, at the same time, not to forget *C. Gowenianum*, which comes the nearest to it in habit and aspect, minding that this latter is quite a dwarf plant in comparison with the other. The cutting plants of *Macrocarpa* grow much after the fashion of the red Virginian cedar (*Juniperus Virginiana*), and,

therefore, will probably never rise so high as plants of it from seeds; and if this volume of the THE COTTAGE GARDENER should ever be lost, what will hinder a man of sense, two hundred years hence, to proclaim against all this, and say that "these two old trees could never come from the same seed."

The following plants I noted down as being just in character, and well-suited for the new rock-garden (if they will have one), in the Crystal Palace Park, or in the block-bank wilderness, at Shrubland Park; the "Dingle," at Badger Hall; and in such other places in large establishments. They are of a wild, luxuriant habit, very seldom met with, and, if planted in large masses in any tolerable good soil, would stamp the place at once with the character and freedom of nature in a wild state. The first and most conspicuous, or uncommon looking, is the Pampas-grass, *Gynerium Argenteum.* A great tuft of this in the new "American ground" is taller than a man, and only showing for bloom. What the length of the flower-stems will be is awful to think of, when compared to our "short grass;" the blades look more fit for waggoner's whips than for fodder. The centre ones rise up as straight as arrows, and the lower and outside ones droop down all round as gracefully as ostrich's feathers on the head-dress of a duchess. The roots of another species of *Gynerium* furnish, in decoction, a kind of "Macassar oil," for the ladies in Brazil to strengthen their hair; and a third species of it yields sugar to sweeten their plums and puddings with. *Penstemon conatum*, a very out-of-the-way-looking plant, is now in fine bloom in the same peat-borders. This also is nearly as tall as a man in boots, very leafy, and comfortable looking at the bottom; a great treat in this section of the genus, and the flower-spikes end in rather handsome flowers, large and wide open in the mouth, but not so long as those of *gentianoides.* The ground colour is whitish, richly marked with purple.

The next is the Indian Poke, from the north of India, and in books called *Phytolacca acinosa.* In appearance this looks very much like a young *Datura*, but somewhat more soft and herbaceous-like; the flowers come on long upright spikes, rising from the forking of the branches, and are of not much account; but when the fruit comes, it is indeed very curious, and rich in colour, just like a long ear or spike of Indian corn, crowded as much as possible all round with very small blackberries from the brambles in our own hedges, the colour a rich dark purple, the height of the plant three or four feet, and very spreading; there are seeds enough in one of these spikes to furnish plants for a whole county. We have it on the authority of Dr. Royle, that the young shoots of this Poke or pocan-plant are eaten in the north of India as we do asparagus. The berries which make up the handsome fruit-spike are very juicy, and the juice is as rich in colour as the best port wine; indeed, they say that port wine is coloured by the juice of these very berries; at any rate, it is a wilderness plant to the top of the last leaf. Can any of our readers send me a few seeds, in a letter, of the old American pocan, *Phytolacca decandra*, a very old plant, that is now as scarce as it is aged in our country, but yet is very highly prized by the lady for whom I beg the seeds? I could contrive to return seeds of the Indian plant in return

My next subject is a buck-wheat kind of shrubby or half-shrubby plant, called *Fagopyrum cymosum.* This order of Buck-wheats includes about 500 species that have been described, and out of the whole lot of them you could hardly hit on a better shrub, or a more shrub-like plant, nor one which shows the bloom in more perfect cymes or flat flower-heads, as in the Laurustinus. This is, indeed, a perfect subject for the object I am writing about; a very dense-growing large, coarse-looking bush, round headed, with soft leaves, and long, green, soft, or succulent shoots; but none of which can you see without turning the leaves aside; the whole surface is studded over with these cymose heads of bloom; the individual flowers are very small, but as white as snow in September and October, and, perhaps, longer; you could mark it out a half-a-mile off, and think it was a Laurustinus in full bloom. There is a whole row of it on the face of a steep bank here, bounding the American-garden, and with other shrubs, alternating with the blue Gum-tree, called *Eucalyptus globulus*, of which a huge plank was exhibited last year in the Crystal Palace, but here it is only a moderate shrub, and has stood out unprotected these last two winters. You see these two a long way off, very conspicuous; the one white all over, and the other a rich light-blue—the natural colour of the leaves. Altogether it is very rich, and well worthy of imitation. We, in this country, admire the beauty of the blue leaves of the Australian gum-trees, but such tints are as sad as death bells to the thirsty traveller seeking for new gold regions; for, as sure as this blue appears on the vegetation in those parts on *Mimosas, Eucalyptuses*, and other natives, so certain it is that he is entering on ground as destitute of water as the well-known deserts in the old world. D. BEATON.

(*To be continued.*)

VISITING GARDENS—WEEDS—AND WALKS.

A CYNICAL philosopher is reported to have said, that woman should, in one respect, take the snail as her model, who never travelled any farther than she could carry her house on her back. With every disposition to allow that home is the province in which woman is seen to most advantage, I should experience little pain in hearing of the surly wight being decently tarred and feathered who voted for confining her there. The garden is the peculiar province of the gardener, and yet, like our sisters, our ideas are apt to become contracted or expanded, according to the range of practice and observation over which they travel. Allowing for many striking and honourable exceptions, the employers of gardeners, as a class, have not come the length of seeing the importance of this as contributory to their own peculiar advantage. If it were otherwise, we should seldomer meet with the cool, self-satisfactory statement, "O, I never go from home;" or the more pitiful reiteration of Sterne's starling, "I can't get out, I can't get out." Will the self-sufficiency in the one case, or the morbid grumbling in the other, be vastly promotive of that cheerful activity, that anxious straining to make the most of circumstances, without which gardens, however small, will not be what they might be? I was lately speaking of visiting the princely gardens of Chatsworth, and a gentleman replied, "You will get as many *wrinkles* there as will pay you for your journey;" and he spoke the truth; but I never yet visited a garden, however humble its pretensions, without learning a lesson. It is no uncommon thing for families residing in the country to allow their cooks a handsome gratuity, to visit London, to see and hear of improvements. Is not gardening a science, and an art constantly progressing? Touring and visiting must be kept in their place; the gardener, like others, must labour for the employer who pays him; but I shall not have written these words in vain, if the proprietors, even of small gardens, see clearly, that in giving their gardener from one to several days in the year, for visiting places, exhibitions, &c., nay, with, in addition, partly or wholly defraying the necessary expenses, they will be promoting alike their servants' comfort and improvement, and their own ultimate advantage.

I allude to this matter here, because the remarks that

follow, and many other ideas, were suggested by the hurried, hop-step-and-jump journey above referred to. Within these few years a great change for the better has taken place in the management of greenhouses and small gardens. The bump of order has come to be recognised. To see some nice plants in the greenhouse, you will seldom *now* require to thread your way among decaying or fading plants, stuck on the walk, in waving lines, as if no other spot could be found for them. Your clean boots do not get dewed in a morning with weeds competing in thickness and height with the box-edging; nor, if it is even a sloppy time at the planting-out period, would you greatly need galoshes for the holes and dabs at the greenhouse door. Still, in the matter of *walks*, there is much complaint from our small garden friends. If, with a strict eye to economy, they make them narrow, then they and their friends must *toddle* behind each other, instead of walking two or three abreast. If they are wide, then they must either be dirty, or entail vast expense in keeping them clean; besides, the first expense in making is something so serious. "There is no gravel near worth anything, and Professor Bigwig says the walk will never stand unless it be excavated at least from nine to fifteen inches deep. I wish I had stuck to the old concern, and let this plaguy gardening alone." A great gully hole must be formed before either walk or road could be made. There appeared to be some magic influence in the subsoil for resisting weight, which could not by any means be found in soil near the surface, though unmoved for generations.

The first peep of light I had on this subject was derived from a very simple matter. I observed, that on dry pasture lands, heavily-loaded waggons were driven without leaving scarcely a trace behind them; but that on the same lands, when wet, the sinkings were such that additional horses could scarcely get the waggon through. Keep roads and walks *firm* and *dry*, and the expensive deepness is dispensed with—was the inference. Shallow, slightly-rounded walks have, therefore, with me, been the order of the day. Still, in plashy weather, especially near doors, where there was much traffic, the walks would be broken, and in all cases these troublesome things, weeds, *would* grow, and worms in autumn *would* raise their heaps. When our friend, Mr. Beaton, was planning and making his valuable concrete walks, I had been experimenting, as detailed some time ago, with gas-tar. I have done nothing as yet but experiment; but in every case of great wear and tear, the tar answered. It may be spread thinly over a walk already formed, or even on earth formed and made in the right shape, fine gravel then over it, rolled, and then a nice layer of finer still for the surface, and then, when getting dry, rolled firmly again. Neither moss nor weeds will grow; and after the heaviest rain they will be dry in a few minutes.

In the journey referred to, I called, in company with a friend, at Kingston Hall, near the Kegworth Station, chiefly for three purposes: to get personally acquainted with Mr. Mackie, the gardener; to see the splendid vinery there, of which all conversant with garden literature must have heard, with its rafter of thirty feet in length, and bunches as regular from top to bottom as if arranged by compasses; and to see the trees that, from six years planting, give a new mansion all the appearance of forty years standing. But to these matters I do not now advert. In passing from the beautiful village to the entrance gates, I was pleased to find that a fine pathway, by the side of the road, was thus asphalted with tar. In the inside policies, Mr. Mackie has made great lengths of walks in a similar manner, I might almost say miles of them. The spaces round his pits were all so done, and thus spouts were dispensed with, while the ground was all hard and clean at all times. Many had been done fully three years, and no failure had taken place. In most cases, a sort of walk had first been formed; the tar, either in a cold, or heated state, was then poured over it from the spout of a water-pot, and then divided and spread thinly with a stubby birch-broom, or, better still, a stout whale-bone one. It was then covered over with fine gravel, silt, or sand, and rolled in when the surface was a little dry. Where tar can be easily got, and gravel is not easily procured, this is the cheapest and best plan for making a walk that I am aware of. There are, however, two drawbacks attending it. First, the smell will be felt for two or three months, even when laid down in summer. And the second is, that after continued rains the walks will present a blackish appearance, but this may be greatly prevented, by giving two or three coats of fine gravel instead of one, so that the last be *fixed* on the surface of the tar without *penetrating* through it. In adopting this process for entrance fronts, it will be necessary to have pieces of gravel the size of nutmegs for the last dressing, before rolling in, and this will afford a rough surface that will prevent horses slipping in frosty weather.

Still, these drawbacks referred to would confirm the prejudices of many of our friends for clear, smooth, gravel walks. The difficulty is to have them smooth, firm, and clean. Whether made deep or shallow, in the ordinary way, weeds and mosses will grow, as we cannot prevent the seeds being blown and carried upon them. The eradicating of moss is almost hopeless until the bright dry weather destroys it. The picking out the weeds destroys the smoothness of the surface, and sweepings, levellings, and rollings must be again resorted to, and this frequently during the season. Hoeing and raking is a barbarous operation for thin shoes and tender feet, and, unless the weather is bright and hot, a short time will give you a walk as green as ever. Digging the walks over every spring is a make-shift, that, by a vast amount of labour in treading, levelling, and rolling, keeps the walks tidy for a few weeks; but the practice acted upon, as a system, brings up regularly, one season, the seeds that were *buried*, not *killed* in the preceding. Various have been the make-shifts of gardeners in these circumstances. Salt, especially when it became cheap, was looked upon as a helping agent; but, with its advantages there were counterbalancing disadvantages. If the weather continued dry after sowing the salt, the *whiteness* was as hurtful to a refined eye as a little blackness of the tar after rain. If strong dews, or a drizzling shower took place, the dressing would be effectual for a time. If a fast, heavy rain occurred, the salt was likely enough to be washed off the walks, and into the verges, killing them instead of the weeds. Nor was this all in such circumstances, the slight saline solution that found its way into the gravel would form a stimulus to other weeds, instead of destroying them in embryo.

Whatever others may have done, in a small way, with a solution of salt in hot or boiling water, it has been reserved for Mr. Fleming, gardener to the Duke of Sutherland, at Trentham Hall, Staffordshire, to reduce the idea to a systematic and very extended practice. When performed on a fine dry day, destruction of weeds is instantaneous; nor is it likely that seeds or insects will escape. The machine Mr. Fleming uses consists of a boiler, holding thirty gallons of water, with a furnace, and iron-pipe chimney, and moves on three broad wheels, to prevent the walks being injured. In every gallon of water nearly two pounds of salt are dissolved, and, when in a boiling state, the mixture is dispersed equally over the walk, through a horizontal tube, fixed behind the machine, by merely opening a valve and pulling the machine quickly along. While the water is heating, the attendants are employed in clipping edgings and other jobs in the vicinity. In a walk that

had been done the day previously, lipping full with gravel, no security had been taken against injuring the grass edgings, except the acquired dexterity of the workman, and yet they were not at all injured. To say they had not been touched, would not be true; for places here and there had been scorched, to the width of the one-eighth part of an inch, but nothing to interfere with the line of the walk. We learned that the cost of such a machine was about thirteen pounds, or guineas; but with it, a quarter-of-an-acre of gravel, or pitching, might be cleaned in a day, for an expense of six shillings. In large places, I have known as much spent in cleaning courts, and weeding walks, as would pay for the machine in a twelve-month. Our amateur friends should try the method on a small scale at first. As Mr. Fleming has taken no patent, machines of all sorts and sizes may be made by any one. He is, however, so anxious that others should benefit by his system, that I have no doubt he would forward an order to an approved maker, or return the address, if the application was in either case accompanied with a stamped envelope. This, I should consider, the most prudent mode, as a little difference in the making may make a great difference in the working. I am very partial to clean, solid walks; but I have sadly grudged the labour they have occasioned me this autumn, the little weeds would *so* shew themselves. I traversed large lengths of gravel at Trentham, last week, clear, beautiful, firm, that required keen-looking to find a green spot, and these had had nothing done to them since they were dressed by the machine in April. I say nothing now of the gardening at Trentham. The style of that is well known; but, striking as the results were, they were not more so than the seen simplicity and economy with which they were produced. Lovers of good walking may now judge for themselves. R. FISH.

JOTTINGS BY THE WAY.

(*Continued from page* 386.)

EATON HALL, NEAR CHESTER, THE SEAT OF THE MARQUIS OF WESTMINSTER.—At this place there are considerable works in the gardening way going on. New terrace-gardens of considerable extent are forming, under the celebrated Mr. Nesfield, whose peculiar style of flower-beds on the terraces will be displayed to a great extent. They are certainly very pretty, but useless, as we think, for what flower-beds ought to be—a display of flowers. The scrolls run out to a great length, and are, in many places, not six inches wide!! nay, even less than that. This struck us as rather bordering upon the ridiculous. The beds, being so long and narrow, are not fit for herbaceous plants, nor are they fit for what are popularly termed bedding-out plants. We pity the gardener who has to keep them supplied with plants and in order; the labour must be immense. There is here a large new conservatory; but, large as it is, it is not of that noble extent that such a place demands. The Hall, when finished, will probably be one of the most splendid in Europe. A princely fortune is being spent upon it, but the Marquis can afford it. The kitchen-gardens are well and ably managed by Mr. Collinson, the kind-hearted and excellent gardener there. In the vineries, peach-houses, and pineries, there were abundance of excellent fruit; and examples of their excellency have been frequently exhibited at the Metropolitan Show. In the plant-houses, we observed a rising collection of our favourite plant, the Orchids, and various tribes of stove plants in excellent health. These gardens are well worthy of a visit.

While in the neighbourhood of Chester, we had the pleasure of visiting the extensive *Nurseries of the Messrs. Dickson.* Mr. Francis Dickson, himself, was obliging enough to walk round with us, and showed us all the remarkable objects the nurseries contained, and they are not a few. We shall briefly notice those that we think will be interesting to our readers. The splendid grass, named *Gynerium argenteum*, is now a noble specimen, nearly ten feet high, and six feet through. The leaves are an inch broad, six feet long, and are of a rich silvery hue. Unfortunately, Messrs. Dickson have not been able as yet to increase it. Near to it was a specimen of what Mr. D. called the *Panama grass.* This is of quite a different character to the preceding. We understood it to be the famous grass that grows on the plains in that country, and rises so high that a man on horseback cannot be seen in plunging through it. The specimen in question was eight feet high, and six feet through, and was producing several spikes of bloom for the first time, which would probably produce perfect seeds before the summer was over. Whether these two grasses will, when increased, be of any use, excepting as ornamental objects, remains to be proved. That rare plant, the *Menziesia empetriformis* was thriving well in a bog-bed, enclosed by hedges, and was beautifully in flower. Also the *Bryanthus erectus*, a plant something similar to the pretty *Rhododendron chamæcistus*, had become quite a neat little bush. In the same nook was a species of a new *Spiræa*, not yet flowered, with very elegant foliage; also a new *Gaultheria* from Mexico, of a beautiful habit, which will rival, if not surpass, the best of its class. It is quite hardy, though from that warm country. The foliage has a considerable resemblance to our common myrtle. Close to these small rarities we observed a very fine specimen of *Taxodium sempervirens*, 15 ft. high, with a stout stem that measured near the ground almost a foot in circumference. It is the finest specimen of the kind we know. Near it stands a beautiful specimen of the *Cupressus macrocarpa*, full 16 ft. high, and thickly clothed with branches. Neither of these handsome specimens have suffered from the severity of six winters; that being the time that has elapsed since they were planted. In another part of the nursery we were shewn a weeping *Taxodium distichum;* a very distinct variety. Every twig, even to the highest shoot, drooped over. It was eight feet high, and certainly a curious, handsome variety. To shew the effects of root-pruning, we saw a bushy *Arbutus procera*, eight feet high, well furnished with branches. This tree, in the course of some alterations in the arrangement of the nursery in that part, was removed about two or three years ago, and the consequence was, it bloomed freely the second year, and bore a crop of ripe fruit, and when we saw it, in August last, it was again covered with fruit, which was rapidly changing colour, and is, no doubt, by this time quite ripe. As our good friend, Mr. Errington, is a great advocate for root-pruning, in order to induce fruitfulness, and resides not far from Chester, we would advise him to call at this nursery, and see this exemplification of the success of the principle. We were pointed out a handsome large specimen of *Rhododendron cinnamomeum*, which we were assured stood the severity of that ever-to-be-remembered winter of 1837-8, in which winter, as is well known, most of the so-considered hardy evergreens were destroyed down to the root. In this nursery there is a considerable number of that singular freak of nature, *Weeping Larches*, drooping in all manner of fantastic ways. They appear to be increased only by approach-grafting. A long row of fine, tall standards had been grafted in the spring, but had, with one exception, all failed. The Messrs. Dickson possess a large collection of that too-much-neglected tribe of plants popularly termed *herbaceous*, especially *Phloxes.* We noted, as being very fine, and not above 18 inches high, *P. Kellerman*, rose; *P. Plantii*, blue; *P. campanulata alba*, *P. Alexina*, *P. Madame Courcet*, peach; *P. Eliza*, rosy-purple.

In a sheltered peat border, we saw, perhaps, the largest existing stock of that beautiful North American plant, the *Spigelia marilandica*. The bed was ten feet long, and three feet wide, and full of plants, most of which were in flower. To a lover of rare plants this sight was rich and full of interest. We fear we are trespassing upon the patience of our readers, but we feel we are only doing justice to the gentlemen who must have devoted a great amount of time and expense in procuring and keeping such an assemblage of rare plants as may be seen here. We could fill a paper twice the length of this if we were to notice all that we saw there. If Mr. Errington will see this place, we are sure he would pick up something worthy of note, especially the excellent way in which the training of fruit-trees, standard as well as dwarf, is managed. T. Appleby.

THE HOLLYHOCK.

(*Concluded from page* 398.)

This fine autumnal flower is so easily managed, will grow so well in almost any situation (excepting absolute shade), and is really and truly so fine an ornament to either the cottage garden or baronial castle, suitable to both extremes, as well as to every intermediate sized garden, that no wonder now, in its improved state, it should be an universal favourite. We have devoted several weeks papers to its culture, and trust that we have raised it in the estimation of such as already cultivate it, and encouraged them not only to persevere therein, but also to try to improve it by raising improved varieties from seed. The cottager might especially direct attention to this fine flower. During a journey, lately, in the north, we saw some cottages ornamented largely with it. The plants had been put in, when very young, close to the wall of the cottage, and supplied, whilst growing, with liquid manure. They had grown strong, and were, when we noticed them, in fine flowering condition. Some had nailed them to the wall in the usual way, with nails and narrow shreds of cloth; others had fastened them up with long rods, placed horizontally, or across several stems at once; both answered well, and the flower-stems nearly hid the walls of the cottages. The flowers naturally turned from the wall, and showed their sunny faces towards the spectator. We were much pleased with the sight, and think the hint and practice might be imitated by more learned and scientific men. Used for this purpose, the hollyhock would hide many a blank, bad wall, or naked bank of earth, or any other unsightly object. We trust, also, our papers on the Hollyhocks will be of some service to our brother gardeners holding situations in gentlemen's gardens. We are quite sure their employers, who are generally at home during the hollyhock season of bloom, would be delighted to have some of the better kinds, such as are mentioned in the list below, blooming in the borders of the kitchen gardens, planted as our friend Mr. Roberts did his, as mentioned in a former paper, and amongst shrubs now bare of bloom, and in various other situations, which a judicious gardener would easily find for them. The stately height they grow to, and the large, bright-coloured flowers, render them fit for situations where other flowers of more humble pretensions would either be smothered, or, on account of the smallness of their flowers, would not be seen. The Hollyhock, on the contrary, may be seen effectively a quarter of a mile off, and may, in consequence, be planted largely for that purpose.

Our pleasant task on this flower is nearly done; all that remains is to give a list of such as are esteemed, and known to be good varieties. Amateurs, florists, gentlemen's gardeners, and cottagers, all who can afford, ought to purchase more or less of them, according to their means. From these decidedly good flowers, cuttings can be taken and seed saved, so that the first purchase may be the only one necessary. The best time to procure them is, we judge, in March, or, if the plants are strong, they might be had in October.

List of good and choice Hollyhocks.

Atrosanguinea, good form; rich dark crimson.
Attraction, form excellent; a curiously mottled flower.
Bicolor, form excellent; purple and white.
Black Prince, good shape; very dark colour, almost black.
Coccinea (Baron), good shape; bright rich scarlet.
Comet (Chater), form excellent; very large flower of a bright ruby-red.
Delicata (Baron), delicate French-white; a lovely variety.
Delicatissima (Bragg), good form; French-white shaded with purple.
Exquisite (Parsons), form excellent; fine deep rose.
Flower of the Day (Bragg), pink; of the finest form and substance.
Magniflora (Bragg), fine deep rose; very large.
Magnum bonum (Baron), rich maroon; a well-shaped flower.
Model of Perfection (Chater), fine; white and chocolate.
Mr. C. Baron (Chater), one of the finest flowers ever raised; a rich salmon; of most excellent form.
Prince of Orange (Bragg), a fine flower; of a deep orange-red.
Queen (Baron), light blush; very pleasing.
Rosea grandiflora (Baron), pink; fine form.
Rosea alba (Chater), rose and white, distinct.
Sulphurea elegans, fine form; clear sulphur.
Sulphurea perfecta (Rivers), fine form; clear sulphur.
Snowflake, a pure good white; of excellent properties.
Walden Gem (Chater), a most excellent variety; of a deep rosy-crimson.

From 1s. to 3s. 6d. each. T. Appleby.

REMARKS ON THE SEASON 1852, AND ITS EFFECTS ON CROPS.

In scanning over the subjects which have appeared in this volume of The Cottage Gardener, I have come to the conclusion that an article expressive of the season, as it has affected the crops, &c., in the district I write from (West Kent), may prove as interesting, if not as instructive as any; and as our little paper is read by many whose residence may be hundreds of miles from this county, they will thereby be able to compare notes, and see how much difference latitude makes in certain things. In this respect, some of those located to the north of the Trent, or it may be of the Tweed, may gather consolation that they are not likely to be last in every thing, as they will see we have our difficulties as well as they, only of a different kind; and they will likewise see that a journey southwards does not infer that progressive improvement in all the productions of the earth, which latitude, and that "time-honoured belief" in great things, which the uninitiated are sometimes led to expect when they first arrive from a great distance to some of the counties bordering the metropolis.

Beginning with the early winter, which was exceedingly dry up to the middle of January, when we had some heavy rains, at intervals, up to the middle of the next month, after which it again became dry with a settled N.E. wind, or nearly so; this, with very little variation, continued up to the middle of May, when a few slight showers became the forerunner of more abundant rains, which fell in the early part of June, and more or less so up to the middle, or near the end of it, when dry hot weather set in rather suddenly, and so intensely warm that the ground, previously soaked with the rain, became converted into a sort of smoking hot-bed. The heat became so extreme in July, as to range

several days above 90°, once or twice 94°; and a gentleman, who keeps a registry of the weather not far from here, reported 97° on one occasion, and 95°, 94°, and 92° on others. This unusual temperature, of course, had a great effect on vegetation; plants of all kinds received an impulse which they availed themselves of; but the hurried nature of this progress was not in accordance with that steady system of development which constitutes quality. This became more conspicuous as the dry weather continued, so that we quickly began to suffer as much from it as we had previously done from the dull and wet weather in June. From this we were relieved by some thunder showers in the latter part of the month, and a consequent abatement of temperature; occasional showers in August carried on vegetation to near the end of the month, when some more dry days intervened. This, however, was followed by rather heavy rains the second week in September, which have, up to the period in which I write, (the 22nd), been very frequent. This cursory notice of the weather which, as will be seen, presents no extraordinary features, has, however, the credit or the blame of many crops being different from what they are in the majority of seasons; but as a separate notice of each will be more useful to the reader than generality, I herewith give the particulars of a few of the most important.

Cauliflowers.—After the first crop was gone, the hot weather of July seemed to have deranged the ordinary succession of this vegetable, so much so, that for a considerable time there was a blank in this production; although, for at least three years prior to this, cauliflowers, or white brocolis, had never been a whole week wanting, though the treatment was the same in this case as in the others.

Onions.—These have been most abundant; one small plot of only 150 square yards, produced twenty bushels of good, useful bulbs, and in all directions I hear of the same uniform abundance. I must not, however, forget to mention, that in some crops that I have seen (as well as in part of my own), I am sorry to see tokens of an early decay. I wish I may be wrong.

Carrots have been as plentiful as onions, and are tolerably sound. Here the principal evil is a tendency they have to crack when full grown; but this is not a carrot county, and the garden kinds being mostly confined to the Early Horn. I have not heard how field crops fare.

Strawberries.—These, contrary to all expectations, turned out very bad on a hot calcareous soil. I was led to believe that abundance of water, administered as it was in a natural way, while the plants were in bloom and afterwards, would be sure to command a crop; in this I was mistaken; the contrary has been the case. The first blooms seemed to have set well, but did not swell as they ought to have done, while the after ones were all but a total failure. This was difficult to account for, as the conditions thought sure to command a crop, were in this season forthcoming in abundance, but it was not so in any place around here.

Peas.—The season for these has been short; and when I tell our north country readers, that after the middle of July they have been supplied very sparingly, they will have some cause to congratulate themselves on faring better. The first gathering I had was on the 21st of May, from Warner's Early Emperor Pea, sown the 15th November, on a south border, but rather a shaded situation, as regards the morning sun. Late summer peas are more difficult to obtain in the south than in the north of England; the dry weather or mildew being evils difficult to combat, though much may doubtless be done. Mine seemed to have a disinclination to bear well from some other cause than mildew, which followed rather than preceded their attempts that way. Later crops look better than those expected for use in August.

Scarlet Runners and Dwarf Kidney Beans in great profusion, and all that could be desired; the former, perhaps, getting too high, and the latter assuming a half-running character.

Globe Artichokes.—The mildness of the winter starting them into bearing sooner than common, a corresponding early ripening took place, so that but few remained fit for table, except in new plantations, which, on this account, it is prudent to make every year.

Tomatoes.—The hot weather in July has hardly been able to compensate for the dull and wet period previous to that and since, inasmuch as they are later than common, fewer ripe fruit being ready by the middle of September than is usual at that time.

Ridge Cucumbers, Vegetable Marrow, &c., were pretty good, the latter especially, promising to continue some time yet in bearing, if frosts do not intervene.

Minor Crops, as sweet herbs, lettuce, spinach, &c., were all about as usual. Lettuce was, perhaps, more inclined to run than might be expected in a season not remarkably dry; the truth of the matter is, there seem other agencies at work than a hot dry-soil, so that the presence of moisture alone is not sufficient to check a tendency which another power may be urging on; nevertheless, lettuces have been as plentiful this season as in the majority of seasons.

Potatoes have been worse than I can remember them to have been (not excepting the fatal season of the introduction of this disease, 1845). Full two-thirds of the crops around here are bad; and how many more may become so before winter is over it is impossible to imagine. I have hitherto refrained making comments on this hopeless complaint, and can say no more here.

Although not necessarily within my province, I dare say my coadjutors will excuse my saying, that the wall-fruits, *Peaches, Apricots*, and *Cherries*, have been abundant; *Pears* are also very plentiful; but *Apples*, which at one time shewed well, are but an indifferent crop; *Plums* are medium; *Currants, Gooseberries*, and *Raspberries* have been good; but I hear some complaints of *Melons* not ripening well, and *Grapes* not colouring; but, certainly, there has been less mildew amongst the latter than in the majority of seasons.

In the flower-garden, *Dahlias* have been fine, which, however, has not been the case with *Roses;* while bedding-out plants, in general, attained an earlier maturity than commonly, and after the middle of August assumed a rankness of growth almost at variance with their flowering; yet the hot weather of July was too much for *Calceolarias*, as they have not bloomed so well this season as heretofore; so that if I had not mixed a delicate autumn-flowering yellow with my other hardier kinds, the beds would have presented only a meagre aspect. I might extend these remarks much farther, but I am reminded that my space is fully occupied.

J. Robson.

ALLOTMENT FARMING.—October.

The time fast approaches when the winter produce of the cultivator must be made safe from the ravages of the Ice-king, and the soil on which they grew thrown at liberty for another course of culture. This has been a serious summer for weeds in most parts—even the most industrious have scarcely been able to keep pace with them; and in numberless instances we fear seeding has occurred, a circumstance entailing a vast amount of additional labour in the ensuing year, if not for several years. Where such has occurred, means should be taken until cropping time to "grow them out"—that is to say, so to manage the operations as that the seed may be made to germinate and be destroyed. To this end we do not recommend the application of the spade for the present, although it is a very advisable course with

weeds, if taken before they seed. It is well, in all such cases, to use a sort of scarifying process, if the operator can meet with a tool adapted to that end. It is very common to resort to the hoe, but we have seen a tool much better adapted to the purpose. It is, we believe, a Kentish tool, and used to be called the prong hoe; it is in form very much like a dung drag, called in some parts of the north a muck-hook. The handle may be about four or five feet in length, and the tines, of which there are two, about five or six inches apart, are flat, and about one-and-a-half inches in width. They are, of course, in a curved form, and in the act of using them they may be said to be hump-backed, the outer part of the curve being upwards, and the tines below so set as to enter the ground at a narrow angle, in order to avoid friction. This is one of the best weapons with which we are acquainted, for carrying out the double operation of working the soil, and of destroying, by germination, a crop of young weeds.

It is now time to commence drawing the lower leaves of the *Mangold Wurtzel;* these are of much service to the cow, and hungry pigs will greedily devour them. They should be removed gradually; one half may be stripped away by the middle of the month, and the remainder, with the exception of the crown, and a tuft around it, towards the end. In the middle of the ensuing month the crown may also be cut, and used up; and we generally let them stand in the ground a week or two after, in order to heal the wound a little. *Carrots*, too, must be looked to; these should be secured by the end of the month. It is good practice to mow or cut over their tops in the beginning of the month, and to let them remain a week or two; and, when taken up, it is our practice to cut them into the quick, as it is termed—that is to say, cutting a slice off the crown; this prevents their sprouting. *Parsnips* may remain in the ground, if requisite, through the winter—dug out as wanted. *Swedes*, of course, may grow on; their tops being hardy, the cutting of them may remain to the last.

The cottager should look sharp after the waste leaves of his *Cabbage-worts* of all kinds, collecting all that show the least symptoms of yellowness, in order to pursue a rigid economy, without which no man can hope to thrive by the allotment system.

The rest of the business of this month is so familiar to our readers, that we must beg to lay before them some account of the extensive allotments at Alnwick, on the estate of His Grace the Duke of Northumberland. Having been staying in this fine old border town for a week, we have had every opportunity of inspecting them, and ascertaining the character of their foundation, for which information we feel much indebted to the great courtesy of Mr. Robertson, an intelligent tradesman of this town, who has much assisted His Grace in carrying out his benevolent designs of heightening the moral, social, and industrial character of these stalwart borderers.

ALLOTMENTS AT ALNWICK.—There are three plots appropriated to this purpose, situated at the back of the town, in three distinct quarters, in order to afford every facility to the mechanics and others in reaching their plots without loss of time. In this, and, indeed, in everything else connected with this benovolent scheme, His Grace the Duke of Northumberland has shewn the nicest discrimination. One of these is called the Clayport allotment, and contains six acres. This is situated at the west entrance to the town, contiguous to the ancient gate called Bond-gate. The second, called Leeks field, is situated on the eastern side of the town, and contains seven-and-a-half acres. The third is called Rotten Row, and is situate on the north side of the town. This contains seven acres. They were commenced about three years since, and His Grace thoroughly drained the land, as a very proper beginning, and fenced it out, as to the exterior of the allotments. The soil is of most excellent staple—a fine, soft, sound, and mellow loam, of some thirty inches deep: a finer soil can scarcely be.

Before proceeding further, we may as well state the conditions on which these allotments are held, and this we will do from a copy of the rules and regulations of the establishment now lying on the table.

Rules and Regulations for the Allotment Gardens in the parish of Alnwick, belonging to His Grace the Duke of Northumberland:—

1st.—The rent is 6s. 3d. for one-tenth of an acre; to be regularly paid.

2nd.—The tenant to be sober, industrious, and of good character.

3rd.—The ground to be cultivated with the spade, and in no other manner; each tenant regularly manuring and cropping his allotment, observing to keep clean and in proper order the roads—their width to be two feet for ordinary paths, and three feet for the main roads.

4th.—Any tenant found destroying, trespassing, or otherwise injuring the property of another tenant, climbing over or damaging the fences, will forfeit his allotment.

5th.—The children of the tenants are not to be permitted to enter the allotments, unless under the charge of their parents, or other proper guardians, who will be held responsible for their conduct while there.

6th.—No tenant will be allowed to sub-let his allotment, or to barter his interest therein.

The above regulations will be strictly enforced.

N. B.—Dogs are not allowed to be taken into the allotments.

(Signed) JOHN BRADLEY
THOMAS ROBERTSON
THOMAS DIXON.

Thus, then, stands the foundation of the establishment; and if any further information be needed, we are assured that such will be readily furnished by Mr. Thomas Robertson, Cabinet-maker, Narrowgate-street, who takes a great pride in all that relates to these valuable gardens. It is worthy of remark, that a few tradespeople are permitted to hold allotments. This may seem a strange feature in the affair at first sight, but there can be little doubt that the policy is of a healthful tendency. His Grace, I am told, has a most liberal desire to break down all invidious and uncalled for barriers between man and man, as far, at least, as is consistent with the present position of society; and, moreover, in addition, he expects, very naturally, that these respectable tradespeople will act as fuglemen in setting examples of high culture. The tradesman is thus brought in closer contact with the labourer, or the working mechanic; and it is to be hoped that such may tend to widen the sympathies that should exist between these portions of society. Some of the parties possess a cow—perhaps about five per cent. of the whole—and these obtain a run for their cow on Alnwick town moor, at least those who are freemen of this town.

In referring to a history of Northumberland, we find the following:—"The town of Alnwick is an ancient borough, consisting of ancient borough houses, for which certain small annual burgage rents, or quit rents, are paid to the lord of the manor and borough of Alnwick; and the freemen of Alnwick are a body corporate by prescription, by the name of the Chamberlain, Common Council, and Freemen of Alnwick. The Duke of Northumberland is lord of the manor and borough of Alnwick, and the forest of Haydon, or Alnwick moor; and the freemen are entitled to common pasture on Alnwick moor, upon payment of the rent of two shillings per annum, for the liberty of pasturing their cattle thereon in the 'fence month.'" Most of our readers will be familiar with the ceremony of making a freeman in this ancient borough; it is a most ludicrous proceeding. As we have not space to give an extract, we may merely observe, that it consists in being dragged through a muddy pool, arrayed in white, being first plentifully regaled with brandy. This is done on St. Mark's day, the 25th of April, a somewhat early period for a sound ducking in the cool mountain stream. They have a tradition that King John originated this strange mode in consequence of his displeasure at being thrown from his horse in the bogs of Haydon forest.

To return to our point: what with this run on the moor all the summer, and some swede turnips grown in the allotment, together with a coarse, rough grass, called by the natives "spart," a material used for covering stacks, they manage to keep their cow "very cannily," as they term it. This, of course, forms a feature in the allotment: the cow-keeper's plot may at once be known by the preponderance of swedes. About a fourth of the allotment men keep a pig, and crop accordingly. Many keep goats and sheep on the moor; and the goats' flesh is eaten either fresh or

salted; and the mutton sometimes sold, sometimes consumed at home.

These holders are encouraged by all means to rely on themselves for manure; little is bought. This is as it should be. The land brings about £3 2s. 6d. per acre under the allotment system, whilst the contiguous fields pay a rent of about £4 per acre. A well is sunk in each allotment, and every facility afforded to the holders, both as to water and conveyance for manure.

On looking over these allotments, I saw several features of high culture, and in general they were pretty clean for so untoward a season. They had mangold, swedes, potatoes, curled kale, carrots, onions, Drumhead cabbage, and various little matters, as rhubarb, and such conveniences; and, on the whole, I was gratified at the general success. Many faults exist in the modes of cropping, arising from mistaken policies; but how can we expect anything else? His Grace would do well to employ somebody to get up a few plain and simple directions, in the form of a neat little hand-book, one to be given or sold to every holder, pointing to the best modes of cropping, whether separate or mixed, and showing forth a good economy in the use of the produce. Much more is to be effected in the way of mixed cropping than these people imagine; and it is, indeed, truly lamentable to see how much ground is lost through a want of sound information in this respect. Of one thing I am persuaded, that the land is capable of carrying any crop with which we are acquainted, in the most capital style. Some parts are rather adhesive, and people who hold land of this character, and are ignorant of first principles, should be taught the improvement of the mechanical constitution of the soil, of which, in general, they have no distinct conception. Burning, and the application of sand, lime rubbish, and even the application of the burnt ashes of the moor, are practices which cannot be too highly commended, and are within the reach of every one.

I may mention, in conclusion, that a most interesting Horticultural and Botanical Society has this year been established at Alnwick, under the auspices of His Grace, and that it has proved very successful, although but in its swaddling-clothes. Rule 3 of this provides that occupiers of allotment gardens, and scholars, shall be admitted to competition on the annual payment of the small sum of sixpence, and each allotment holder is entitled to two tickets of admission to each exhibition; so that every stimulus is held forth to tempt to industrial habits.

Some who read these remarks may think that such are merely local affairs; I think far otherwise—their bearing on future generations, to say nothing of the present, is incalculable, and it may truly be styled a national affair. Wherever gardening industry is brought out, cleanliness, system, thrift, and even taste, will follow; and I need hardly point to the moral and social influences, and even to Christianity itself, as being equally assisted by such a useful auxiliary. The Duke has a school in what is termed the "Green Bat," to which I must beg to advert, inasmuch as it is in some degree connected with the allotment system, and the Horticultural Society. Over the frontage is the following inscription:—

"For the education of 200 poor boys.
This School was erected and founded by Hugh, Duke of Northumberland,
On the 25th day of October, 1810.
In commemoration of our Sovereign, George the Third,
Having on that day completed the 50th year of his reign."

This school is conducted on the Lancasterian system, and every youth has a garden, for which he is responsible. A handsome parallelogram is set apart adjoining the school, and this is intersected by a broad and compact walk, on either side of which is a nice flower border of a yard in width, well filled with handsome herbaceous plants, annuals, bedding flowers, &c.; and it is truly delightful to witness the assiduity of the youths in trying to excel each other. Their plots are about four feet wide by nearly twenty long; and a two-feet alley separates the contending parties. We have before observed, that a rule of the Horticultural and Botanical Society provides that the children of this school shall be admitted to competition, on payment of the small sum of sixpence; and we are told that a most interesting and animated competition took place at the last meeting.

One thing struck me as wanting: some arrangement by which the boys might be taught the rudiments of botanical knowledge, or, at least, a taste for correct nomenclature; and I ventured to suggest to Mr. Collinson, the very respectable master, the propriety of having every plant in the borders correctly named, and of furnishing the youths with labels, in order to secure a continuance of the object. A few packets of annual seeds, too, might be put in their hands on each returning spring, and a few elementary works on botany and vegetable physiology placed in their library. Our little weekly COTTAGE GARDENER, I venture to say, would be found a welcome addition to their table. Thus the youths would gradually acquire a taste for the sweet, as well as the useful.

If I have fallen into any error in the details, I shall be obliged by a correction; and I cannot but repeat my obligations to Messrs. Robertson and Collinson, for their readiness to afford every opportunity for acquiring all necessary information. Lastly, it is well to observe, that since the establishment of these allotments, vegetables have been much cheaper to the townsfolk, and, of course, more abundant. This is a bearing of the subject hitherto overlooked, and one of importance. It would be well, in the event of more serious losses still in the potatoes, for folks to find themselves readily reconciled to the use of other roots.—R. ERRINGTON.

GREAT YARMOUTH & EASTERN COUNTIES POULTRY ASSOCIATION.

THE first show of this Society was held at Yarmouth on the 16th inst., when upwards of 600 birds were exhibited, occupying about 200 pens. The attendance was very numerous, and great satisfaction was expressed at the very excellent arrangements of the committee for the accommodation of the poultry, and the convenience of visitors. Amongst the birds shown were some extremely fine specimens, and attention was particularly drawn to the pens containing the geese, ducks, and turkeys.

The number of entries of *Cochin-China Chickens* of 1852 was so large, and they were so generally meritorious, that it involved the judges in no small trouble and difficulty to arrive at a satisfactory decision.

The *Golden-laced Bantams* shown by the Honble. Mrs. Astley, of Swanton House, Thetford, were very good, and so also were the *Silver-laced Hamburghs* of Mr. Frank Astley, of Ryburgh Hall. A cock and two hens of magnificent *Black Cochins* were shown by Mr. Fairlie, of Cheveley Park. The *Spanish* were but middling. The *Dorkings* of the same kind, and the *Game*, must fall into the like category.

As a whole, the show was a successful one; but the Cochin class exceeded one-half of the whole show.

The judges on the occasion, were Dr. Horner, of Hull, G. J. Andrews, Esq., of Dorchester, and Mr. J. Baily, of London.

LIST OF PRIZES.

Cochin-China—75 entries—Cock and 2 Hens—full-grown. (*Buff.*) H. Sams, Esq., Clare, Suffolk. (*Brown or Partridge.*) C. Punchard, Esq., Haverhill, Suffolk. (*White.*) G. C. Adkins, Edgbaston, Birmingham.

Cochin-China—Cockerell and 2 Pullets, 1852. (*Buff.*) 1st. H. Gilbert, Esq., Kensington. 2nd. C. Punchard, Esq., Haverhill. 3rd. Miss E. Watts, Hampstead. 4th. J. Fairlie, Esq., Cheveley Park. 5th. Capt. Squire, Mildenhall.

Cochin-China—Cockerell and 2 Pullets. (*Brown or Partridge*). 1st. C. Punchard, Esq., Haverhill. 2nd. Miss E. Watts, Hampstead.

Cochin-China—Cockerell and 2 Pullets. (*White.*) Six competitors. G. L. Peters, Esq., Birmingham.

Black Spanish—10 entries—Cock and 2 Hens. The Honble. Mrs. Astley, Burgh House, Thetford.

Dorkings—9 entries—Cock and 2 Hens. The Honble. Mrs. Astley.

Chickens. No prize awarded.

Malays—3 entries—but not deserving.

Polands—8 entries—Cock and 2 Hens. Mr. R. M. Brand, Great Yarmouth.

Game—4 entries—Cock and 2 Hens. Mr. A. Cannell, Cringleford, Norfolk.

Hamburghs, Silver-spangled—6 entries—Cock and 2 Hens. G. A. Marsham, Esq., Stratton, Norfolk.

Hamburghs, Golden-spangled—8 entries—Cock and 2 Hens. Mr. Thomas Church, Acle, Norfolk. Prizes were also given for chickens of the above, 1852, to Mr. Thomas Barber, Acle, The Honble. Mrs. Astley, and to F. L'Estrange Astley, Esq.

Bantams, Gold-laced—7 entries—Cock and 2 Hens. Honble. Mrs. Astley.

Bantams, Silver-laced—2 entries—Cock and 2 Hens. Mr. J. Dutton, Bury St. Edmunds.
Bantams, Black—6 entries—Cock and 2 Hens. Mr. G. Francis, Gorleston, Suffolk.
Geese, of any breed—10 entries—Gander and 2 Geese. Mr. J. Taylor, Shepherd's Bush, Hammersmith. Mrs. Fowler, Acle. Mr. George Beck, Caister.
Ducks, Aylesbury—4 entries—Drake and 2 Ducks. 1st. Messrs. Youell and Co., Yarmouth. 2nd. Mr. R. Steward, Yarmouth.
Ducks, Rouen.—1st. F. L. Astley, Esq. 2nd. C. Punchard, Esq.
Ducks, any breed.—Mr. W. Wright, Yarmouth. Messrs. Youell and Co.
Turkeys, Black Norfolk—4 entries—Cock and 2 Hens. Mr. W. Matchett, Kertley, Lowestoft.
Turkeys, any colour.—1st. G. A. Marsham, Esq. 2nd. Mr. S. Balls, Yarmouth.
Turkey Poults.—John Fairlie, Esq. Extra prizes were awarded to Mr. John Taylor, for a pen of *Andalusian Fowls*, and to W. C. Reynolds, Esq., for the best *Silk Bantams*.
Pigeons.—Prizes were awarded to Mr. Beazor, Yarmouth, for the best pair of *Almond Tumblers*, and to G. C. Adkin, Esq., Birmingham, for the best pairs of several other varieties.

THE APIARIAN'S CALENDAR.—OCTOBER.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide."

STOCKS.—Many of the stocks, upon examination, as I had already anticipated, are found to be very light, and more especially so those that have swarmed, so that without feeding they cannot survive the winter. When they are found to contain only seven or eight pounds of honey, it will be better to unite the bees to other stocks, and to take their honey, for the trouble and expense of feeding such stocks will be more than they are worth, even if they are kept alive through the winter. Should they, however, be in a favourite description of hive, and a desire exist on the part of the proprietor to keep it tenanted, it *may* be done, and the best and safest method of insuring it that I can recommend, will be to give them, during the present month, a sufficient quantity of honey, or sugar and water, with honey, as recommended in THE COTTAGE GARDENER, till the stocks weigh from twenty to twenty-four pounds each. Having done this, and taken effectual means of keeping the hive free from damp, very litte fear need be entertained of their being carried safely through the winter without any further attention, beyond that of occasionally cleaning the floor-boards, and shutting up the hive whilst snow lies upon the ground.

THE SEASON.—It appears that the quantity of honey collected this year has been unusually small, and not of a first-rate quality; in some very favourable localities, perhaps, there may have been a few glasses obtained, but in this neighbourhood (Bury St. Edmunds) I have neither seen nor heard of a good glass having been taken; such a continued succession of bad seasons as we have lately experienced, cannot fail to have been very discouraging to young apiarians, but I would have them take courage, and hope for better ones.

STRAW HIVES.—I have lately had a specimen hive brought me by the maker, of very superior quality. I wish that I had seen it in time for the exhibition, and it should certainly have appeared there, for I saw nothing amongst those exhibited to equal it. It is my intention to keep the man employed, during the coming winter months, in making them, that I may have a good supply for the accommodation of all my friends and correspondents who may wish to possess them. They will be made of my last improved shape, *broad and shallow*, for it is now proved, beyond a doubt, that bees do better in a broad, shallow hive (of whatever material it may be composed), than in a narrow, deep one. The price of this hive must, consequently, be a few pence more than those I have usually had made, but I believe *only* a few pence; for by having a quantity made, and in the winter months, they will be charged as low as possible.

PREPARATION OF WAX.—In reply to many enquiries on this subject, I beg to refer to *page* 285, *vol.* 2, of THE COTTAGE GARDENER, where full directions will be found.

THE LAKE AND ITS TENANTS.

THE LAKE—delightful word! The mere name refreshes; the ideas it raises, tranquillize. Let us glide, then, in imagination, or better in real fact, over the smooth clear waters, with a warm air around us, a bright sun overhead, and every worldly fuss and bother left on the bank behind those rustling reeds. If Black Care mounts and sits behind the horseman, he shall find no vacant corner to occupy on the stern of our happy boat. For, pure water isolates us from witchcraft, from malignant wishes, and from evil eyes. Here we are bathing in an anodyne for past sorrows and threatening anxieties. What a blessing this escape, though only for a little while, from the machinations of living men! To devour the most stirring romance, to dream over the most ideal poem, does not separate us more widely from vulgar working-day troubles, than does this gentle passage from shore to shore, each made lovely by the veil of distance. Pray let us move as slowly as we can, consistently with actual motion, lest the voyage come to an end before we have thoroughly had our fill of it.

Where is your lake? Our lake shall spread its surface in various pleasant places. It shall be natural or artificial, deep or shallow, tenantless (though that can hardly be) or crowded with life, as best may suit our pleasure. It shall be deep sheltered by woods in the most lovely park, or it shall lie exposed, in an unfrequented tract of marsh land, to the furious north and eastern gales. Nay, if even the small pond in the pleasure-ground, or the river, flowing through rich meads, is compelled to contribute to its mass, the plural pronoun will be but the more apt to express what is seen, and done, and revelled in there. Glide we, then, steadily forward, by the pressure of a soft breeze into a spreading sail. Gaze upwards and watch the wheeling flocks of plovers, or look downwards and wonder at the streaming water-weeds and swift-darting fishes over which we are suspended;—only enjoy!

A tranquillizing spell is cast over every thing around us. Nature breathes softly, like a child in a deep sleep. She is taking her repose between the storms which agitated, and which will agitate her again. It is a day of rest to gather power for future efforts. That splash! we have disturbed a pike in his sunny dose. And there stands a heron, complacently digesting his fish dinner, chin on breast, poising himself in nice balance on one leg. You and I should not think that a "stand at ease" arrangement of the lower limbs. Mere prejudice, my friend, and want of practice. A frequent posture of the natives of Australia is to stand on one leg, with the foot of the other planted against the knee; and this appears to be a posture of rest.* *We* should not get on much better at first, in taking a seat Turkish fashion. But we have disturbed the Hanser's quietude. He marks that we are observing him, and flaps leisurely away, alighting soon with a dancing kind of step. The meeting of these birds in a marsh puts me in mind of another Australian custom; they often make, or renew acquaintance, by dancing a corrobery with the fresh-met companion.

What a marvellous form is *water* for matter to assume!—matter, the hard, rough material, once chaotic, of which the universe is made. Here it is yielding, disunited, infinitely separable, divisible by the slightest touch, and yet has power enough to bear us up over the surface of the earth, as if we were flying in this coarsely-patched vessel; and it could, under the impulse of the winds, dash us and it to destruction. Transparent too! We *see* that we are buoyed up above the point which we might fall to, by a repulsion which *is* as mysterious as the unseen influence of gravity, or the energies of the loadstone. It is not foolish to call water a very strange and queer thing. At a word,—only command the thermometer to *fall* half a degree, and the non-coherent assemblage of atoms becomes a solid rock. At another word, while it is still water—command the thermometer to rise half a degree, and it becomes a cloud, visible or invisible as it may be. If it perplex the strongest brains, to ask them "what is matter?" the puzzle becomes even more confounding, when we suggest what a miraculous kind of matter *water* must be.

Fire-worship is so familiarised to us during the course of our readings, that we come to regard it as the natural outbreak of an imaginative mind unaided by Revelation. On reflection, the worship of water, not for its common uses, but for its mighty power and illimitable vastness, would be quite as obvious to men dwelling on the sea-shore, or the

* Jukes's Voyage of the Fly. Vol. i., p. 61.

banks of immense inland lakes. One is almost led to say, that there *ought* to have existed such a form of Paganism. The great serpent which encircles the world can be no other than the ocean stream. But Neptune has so little reality, that he is not even a myth. He is no more a thing of faith, than Britannia, with her trident, on a half-penny. We just think of him as a personage in one of Verrio's allegorical frescoes, as one of the masks who open or conclude a pantomime, or as the jolly tar in rude travestie, who comes to shave, with iron hoop, the novice making his first transit of the Equinoctial Line.

Our lovely lake, whereon we are now swimming with delight, is *fresh* water, clear, sweet, and tepid. Put your hand in; how smooth and soft it feels, making the immersion of the whole body, as an embrace of enjoyment and possession, almost irresistible! Yonder, on the other side of those sand-hills, roars a vast mass of waters, containing no very great admixture of other element with such particles as these, but which produce a most wonderful effect, even on life itself. Listen! That murmur is sent forth by the waves of THE SEA.

But it is a popular error to sub-divide all waters into two kinds only, the fresh and the salt, as much as it would be to speak of all climates as either hot or cold. There are as many intermediate degrees of saltness as of temperature, which are agreeable, in a different measure, to the constitution of different species of aquatic creatures. And there is no guessing beforehand what each will like, or what it can stand. Mr. Darwin, in his Naturalist's Journal, tells of living things found in saturated ponds of brine. Among fresh water fishes, the pike turns up on the admixture of a very slight proportion of salt water, as has been occasionally seen in the East-Anglian Broads. The perch and the bream bear more. The eel thrives, and fattens, and acquires its best flavour in waters decidedly brackish. On the other hand, several sea fish, as the grey mullet, seem to have no objection to, and even to prefer, waters with a less than usual quantity of salt in solution. I do not here allude to the complete change of medium which the salmon and others experience every season. They enter the fresh waters for the sake of spawning; but the purer element may be periodically as necessary to their then state of health, as it is on first hatching to that of the fry. It is curious, however, that the short jaunt from salt to fresh water, and again from fresh to salt, which proves so salutary to the fish, is *apparently* fatal to its parasites. The change of air does not suit *them*. The *sea*-lice adhering to the back of a fat, glittering salmon, are sure proof that it is "a fresh-run" fish—a new arrival from the ocean. They quit their hold an hour or two after entering the river. On its return, the poor shotten, black, emaciated creature suffers from a worse nuisance, *i. e.*, whitish worm-like infestors of its gills, whose acquaintance it has made somehow during its sojourn amidst inland waters, but which are *supposed* to be obliged to quit their hold soon after they have heard the roar of the breakers, and tasted their quality.

The undecided and hypothetical way in which I speak of these parasites of the salmon, arises from the fact that the metamorphoses, and all the physical arrangements, of such creatures are so extraordinary, and the adaptation of living beings to the circumstances under which they are required to live, are so marvellous and unexpected, that though the sea-louse and the fresh-water worm (one found upon the scales of the fish, the other in its gills) are believed to be utterly distinct creatures, it is quite possible that they are only successive forms of the same individual parasite. The sea-louse *may* be designed to reproduce in fresh waters, as well as the salmon. Its minute young, in the form of animalcules, may be invisibly dispersed through the streams, breathed by the fish, and so may attach themselves to their ordained *habitat*, the gills, during the passage of the water through them. A transformation there, while the salmon is out at sea, and a shifting of quarters from them to the outer cuticle, is less difficult to imagine than the change of a bot in a horse's stomach, to a winged-fly, which shall buzz about the quadruped and lay its eggs on the hide, *only* within reach of the tongue that is to lick them off and swallow them for hatching! These mysteries are yet but imperfectly unveiled. Mr. Denny has still a wide field before him.

A scale graduated in degrees of saltness, or *haliometer*, might be drawn up, of which fresh water would be the zero, and oceanic saltness indicate a conspicuous stage—a sort of freezing, or a boiling-point—continuing to higher proportions of saline solution; and it would be interesting to note the range along the scale taken by different creatures as *their* element. Plaice and flounders are capable of bearing water perfectly fresh; several of the flat fish will put up with a very short allowance of salt in their respiratory and natatory medium, *e. g.*, soles and turbots. No fish ought to enter the mouths of rivers which could not cheerfully submit to such a deficiency; though worse misfortunes are in store for them. Some workmen repairing the Quay-head, at Great Yarmouth, observed a nice turbot swimming along by the water's edge, and inspecting their progress. They quietly got between him and the deep water, and hoisted him out with their hands upon the Quay itself. I saw him while still living, and had the pleasure to dine off him next day. Oysters fatten the faster for being subject to a slight influence of waters from the land. At Stiffkey, in Norfolk, celebrated for mussels, the best are the *sluice* mussels. These are marine things, enjoying, for a time at least, a degree of saltness below "ocean point." Above it, are the creatures that swim unhurt in that distasteful mixture, the Dead Sea, or, still more surprising, in Mr. Darwin's South American brine-ponds.

It does not appear very clear *how* it is that most of the fish inhabiting fresh-water lakes are killed by the irruption of a certain number of barrels from the sea. Salt does not combine with *living* bodies. A man may take ever so many dips at Brighton, without being converted into pickled pork. There is nothing structural visible to the eye, why salt water should be fatal to one fish, and indispensible to another; any more than there is, among plants, why a night's frost, which leaves one species untouched, should burn or dissolve another. The sea-worm which our Mundesley fishermen dig from their sands at ebb tide, for bait, is certainly larger, but *looks* as tender-skinned as its first cousin, the common earth-worm, to which, a few drops from the sea are an immediate sentence of death. Many marine-worms are more fragile and thin-skinned than the medicinal leech, on which the severe effects of salt are so familiar. How delicate is the cuticle of the expanded sea-anemone! The cause of death cannot be the different quantity of oxygen held in combination by sea and river water. One can only *guess* that solutions of salt act on the gills and tender surface of certain creatures, as they do on a raw wound with us, by painfully affecting the nerves; and that the animal is destroyed by the sudden shock and the over-head-and-ears plunge into suffering thus inflicted; while in others, the same organs are protected or rendered insensible, as our cuticle protects our flesh. But this notion leaves unexplained why most salt-water fish die on removal into *fresh* water. D.

(*To be continued.*)

THE MERITS OF COCHIN-CHINA FOWLS.

So much has been said about that fashionable subject, the Cochin-China Fowl, and I have said so much myself, that I had made a resolution to revert to it no more, at any rate for the present. I cannot help, however, offering my concurrence in Mr. Wingfield's account of the merits of these useful birds, and their capabilities as the poor-man's stock. That gentleman's knowledge, of what we all ("Gallus" included) agree in appreciating—the square-built, short-legged variety—is so full and so practical, that my opinion, in addition to his, may seem superfluous; but "Gallus's" crow, although not defiant, must have a cackle in reply.

In spite of their present high price, in spite of the prejudice which at present exists against them, as fowls for the table, and the quantity of corn they are accused of consuming, I do most decidedly believe the Cochin-China to be the best fowl for the poor man and the farmer; considering them, as I once before had occasion to remark, not as fancy, but only as productive stock.

I am sorry I have never kept account of the eggs la d by my nine hens, for the supply from them has been most

abundant. It is quite usual for a hen to lay thirty or thirty-five eggs without missing, as mentioned by Mr. Wingfield; they will sometimes double that number, sit, and lay again a day before their chickens are three weeks old. Mine have laid so incessantly, that I am now delighted to find them taking a holiday during their moulting. Considering the great number which are laid, and that the hens are always industriously occupied in *producing*, under one form or other, I do not consider the eggs small. It will not, of course, do to compare them with those laid by the Spanish fowls, especially by such specimens of them as "Gallus" is fortunate enough to possess, but I find that the *hen's* eggs weigh from 2¼ozs. to 2½ozs. each, a size as good as that of those which are usually sent to market.

The ridiculously early period at which the pullets begin to lay, is a circumstance capable of being turned to valuable account by the cottager while getting his stock together, by the restoration, during the scarcity of winter, of the little capital expended earlier in the year. I had a pullet last year which began to lay at fourteen weeks old (I hear her daughter, this year, has done the same); and, if no means are taken to keep them backward, it is *common* for them to do so at four and five months. When they have laid out their batch, I find them as certainly desire to sit. Thus the owner, who has raised or purchased chickens in the spring, may get a brood or two late in the summer, or early in autumn, and have chickens ready for the table about Christmas, which might partly or wholly replace his original outlay. Chickens so bred from cockerel and pullets, and hatched late in the year, would, of course, never compete with Cochin-China fowls raised under more favourable circumstances, but for the table they would, I believe, be larger and better flavoured than the common fowls which are sold at the markets, and would command a more than remunerative price. These chickens would scarcely be ready to kill under four months old, as from being bred from such young fowls they would fledge slowly.

The frequent and pertinacious desire to sit, I consider the only drawback in the Cochin-China fowls; but it would not be such in the eyes of the cottager, to whom it is most likely chickens would prove more profitable than eggs.

We have eaten a great number of Cochin-China fowls, and find them to be, without exception, by far the finest-flavoured best birds for the table which we have ever either bred, or bought, or eaten; excepting always, with deference, "such special Dorkings as Mr. Baily's shop can often supply," and which could scarcely be *beaten* by *any* poultry; those chickens which can *compete* with them have reason to be proud indeed.

It was the fate of one of my young cockerels lately to undergo the very severe test of being mated (on the table) with one of Mr. Baily's deservedly celebrated Dorkings. Mr. Baily's man trussed both the chickens; the Cochin-China was only a few ounces heavier than the Dorking (which was one of the finest I have ever seen), and there was no perceptible difference in the length of leg. The Cochin-China was what I (favouring the Cochin-China) should call a richer ("Gallus" will say less delicate) looking fowl, and in flavour I think it would puzzle a very experienced epicure to decide which was the nicest. The members of our family, *out of the dining-room*, made a point of tasting both, and pronounced, very decidedly, in favour of the Cochin-China.

There is a sufficient difference between the Cochin-China and other fowls to allow us to congratulate ourselves on realizing, in them, a new dish for our tables; but I do not think there are any, who have given them a full, fair trial, that will not pronounce both the fowls and their eggs very delicious. Yet I can perfectly understand what "Gallus" means, when he mentions their flesh as "coarse and stringy:" we had a chicken killed this year, who, from his upright gait, and length of leg, made me suspect some (perhaps far back) cross with the Malay: he was not bred from my own stock, if he had been, he was just one for whose sake I should have banished his mother. The flesh was what "Gallus" describes, especially the legs, but I have never known this the case with the square built variety. The readiness with which they fatten, or rather the excellent condition in which they are usually found without any fattening at all, is a very valuable quality to the farmer, and all who may hereafter rear them for the market.

I do not find the Cochin-Chinas greater eaters than other fowls, even without Mr. Wingfield's reservation respecting their greater size. From beginning to keep fowls before the year 1842, I have, each year, kept a little note-book, in which expenses, among other interesting facts pertaining to the hen-yard, have been noted, and I remember reckoning from the commencement (with five little fowls and a peck of barley), that one penny a week for each fowl might be considered the expense of keeping them, and feeding abundantly; that the average is below this during the first part of the year, while the chickens are young, and rather above it from the time the young cocks begin to crow, until they are gone, making it a *yearly* average of a penny per week for each. On referring to the little note-book this year, I find the average cost, for the first four months, has been two-thirds of a penny; the next three, May, June, and July, rather under a penny; and for August and the first week in September, a fraction over the penny. As the chickens are now almost grown up, the remainder of the year will cost rather more than the past months, and will most likely bring the year's average up to a penny a week, showing that the Cochin-China fowls have cost *me* the same which I have expended at different times on common fowls, on some very indifferent Dorking, on Spanish, on a mixed lot of Spanish and Malay, on the Dorking-crossed Cochin China, and some other kinds. I should mention that the cost of the early months this year is over-rated, as there was a remainder of last year's chickens not reckoned, and also that many of the cockerels are now large, and, being separated from the pullets, have no gallant ideas of seeing their hens first satisfied, to interfere with their very excellent appetites. I often notice, moreover, that five common hens, which I keep for old acquaintance sake, and use as sitters, are busy eating after the Cochin-Chinas are satisfied.

A consideration most valuable to the poor man, and to those who have his interest at heart, is the indifference of the Cochin-China fowls to first-rate accommodation. They are very robust and healthy, seldom ill, and less easily hurt, from the egg-shell upwards, than most kinds. Much as I admire the excellent and beautiful houses made for them by many amateurs, and pleased as I am to acknowledge the *advantages* of these very superior arrangements, I cannot help saying, for the encouragement of those who cannot, or do not wish to, spend much, that they are not *necessary;* and that the fowls may be successfully reared with very simple appliances. A fortnight ago, a former neighbour of ours, an amateur and good judge, called while I was unluckily from home; after kindly expressing an opinion very flattering to my little stock, he remarked, "but how *could* all these have been raised without any conveniences?" At some future time I shall inflict an account of my (non)-conveniences, and their cost, upon the readers of THE COTTAGE GARDENER; in the meantime, it is sufficient to state, that I find them the hardiest fowls of any which I have either tried or known—nice, contented creatures, who will seek shelter, and make themselves comfortable under most circumstances; and that, after comparing chickens of the same broods and parentage, I do not find those of my favourite buff-colour more delicate than the partridge-marked. Neither have I ever found harm arise from the chickens being so early deserted by the mothers, although I have had this occur during quite severe weather. Cochin-China chickens are slow in fledging, but the *excessive backwardness*, the *miserable nakedness*, complained of by "a Brighton Subscriber," p. 232, and "J. Hitchman, Esq.," p. 345, I do not consider natural, but, as far as my experience goes, to appertain especially to pullets' not hens' chicks. This idea is borne out by "The Subscriber's" illustration, as it will be remembered that Mr. Andrews's prize-birds (the parent, if I remember right, of the bird specified), were only themselves hatched in April, 1851. I find chickens bred from mature birds fledge kindly, though slowly, and get quite covered *within* three months, which is, I think, quite young enough to commence killing for the table.

Like Mr. Wingfield, I have found the Spanish difficult both to hatch and rear. The necessity of procuring other

hens, as sitters and mothers, would be against them as fowls for the poor man, by rendering it necessary to purchase these from time to time, for mother-hens, like others, will die off and want renewing; and I have found the half-bred Spanish follow the nobler parent in disdaining these homely offices. Sorry as I am to differ from one of "Gallus's" knowledge, experience, and candour, I must conclude with the expression of my firm conviction, that the "Mania for Cochin-China fowls" will be supported by the fowls themselves, and even rendered more general, by their productiveness, tameness, and beauty. Anster Bonn.

WILD BEES.

By H. W. Newman, Esq.

(*Continued from page* 373.)

The next species I shall describe, is the very common *A. hortorum*, of Linnæus. This is very similar to the last in appearance; it has a longer body but not so *thick*. It is easily distinguished from the *A. terrestris* by the quickness and volatile nature of its flight; flying much nearer the ground on all occasions in a sort of jerking and uneven way. The males of this species are much more difficult to be distinguished from the workers by a *casual* observer, being of the same colour; but their antennæ are much longer, and the abdomen more broad and hairy.

The nests of this species are also in the ground, and generally about half a foot further from the entrance than in that of the *A. terrestris;* indeed, much time must be lost by these insects in going and returning; they usually prefer old drains, or the sides of old walls, for their habitations, and are not nearly so strong in numbers as the *A. lucorum*, generally not more than from twenty to fifty in a nest. The male is among the first to appear. I have seen them the end of June. The queen is a month *later* than the *A. terrestris*. I have had several colonies of them, but they were never such favourites, not being so docile, and more irascible than the last described, so I had fewer nests of this species than of all the other four. The drones are of the same habits precisely as the last; they are deprived of the faculty of returning to the parent nest after once leaving it, and these males can be more easily discovered after their exit, and they become regular wanderers, even more than any other species. Any observer may watch them in their unsteady flight *very near the ground*, paying visits to the roots of trees, holes in banks, &c. At first appearance, they look as though they intended to alight at these haunts, but this they never do until a round of probably a quarter of a mile is made in this manner, when they require nourishment; they then return to the thistles and flowers, where they frequently remain all night, particularly in cold weather, and may be seen dormant in the morning; when taken in the warm hand they soon recover and fly away. The nests of this species being further in the ground, and often amongst old drains, are more difficult to take. When a boy, I have often made an attempt to take them, and failed, and in the neighbourhood where I reside at present, the wet summer and autumn of 1839 destroyed the greatest part of this species of bee, and they have never been so fruitful since. They seem to be more numerous in the midland and southern counties than in the north. I have found great numbers in Northamptonshire; and some years since, at the Isle of Thanet, I observed hundreds of the drones of this species vagabondizing about, and scarcely any of the *A. terrestris*. Close to the sea side they were more numerous than any where else. The *A. hortorum* does not interfere with the hive bee in its *pasture;* they select large flowers, which the others cannot reach with their proboscis. This bee is very fond of the "Digitalis," or Foxglove. It is beautiful to see how it opens the flower of the large red snapdragon, particularly the queen mother. Were a small bee to get into this flower, the collapse is so strong it could not force its way out, consequently it never attempted it. In creation, how wonderfully is every thing adapted to its particular purpose! The *A. hortorum*, having the longest proboscis of the four most common species, searches for a different set of flowers from its congeners, despising the white clover, the sweet-scented lime blossom, &c., and preferring the wood honeysuckle, foxglove, snapdragon, and others of the largest and wildest flowers of the forest. When it condescends to visit our gay parterres it will be busy among the flowers above-mentioned. In the month of August the queens of this species are seen *booming* along, scarcely able to fly, probably full of eggs, and quite different from the active, nimble worker. The male bees may be seen, late in November, dormant on the thistle, with their hairy bodies and long antennæ; after this time they all perish. There is a variety of this species all black, very like them, but not so common; the males have the same habits, leaving the nest once, and not returning. The *A. hortorum* may be found in great numbers in Woodland countries, which they certainly prefer, and but for the wild wood mouse, these bees would be ten times more numerous.

I have found the two last named species (the *A. lucorum*, and *A. hortorum*), more infected with small lice than any other. The old queen mother is often quite covered with them, and so close do they keep, that it is a work of time and difficulty, as well as requiring patience to rid them of these troublesome vermin. Sometimes their poor bodies are nearly eaten in two by these lice, and I have often found them, in consequence, weak, unable to fly, and in a dying state. The *A. hortorum* is full fourteen days or a month later in making its appearance in the spring than its congeners, the *A. lucorum* and *A. terrestris*, another instance of the wisdom of Providence, as no flowers fit for its use are in blossom at an earlier period! Notwithstanding this, and the paucity of numbers, the *males* are a month earlier in being hatched, and leaving the nest, than the *A. lucorum*.

(*To be continued.*)

DUTCH EVERY-DAY-LAYERS.

This variety of fowl is widely spread over England, and is much esteemed for the production of eggs. It has been long known among us, and various districts have different names for it. The Dutch Every-day-layers having been a long time cultivated here, slight alterations have arisen in their plumage, which changes have become marked varieties, which I shall endeavour to describe as well as I am able; but, doubtless, I am not acquainted with every variation that has occurred.

These fowls are rather small, but neat and nicely made; they have rose combs, which should terminate in a single point, directed backwards; the gills more or less elongated, and sometimes appear folded; the ear plates are small and white; the legs are of a bluish lead colour; the nails whitish. They are the best sort for laying I know of, though their eggs are smaller than of some other kinds, still not smaller than those of the generality of common fowls. It is, I believe, very rare for true birds of this breed to want to sit, but they continue to lay throughout the summer; from this reason, and also that they are imported from Holland, they have received the name of Dutch Every-day-layers. The name of Hamburghs has also been applied to them, because some have been brought from that place; but that name is already given to a top-knotted variety, and is, therefore, improper in this case. They are known by a variety of names, viz., Bolton Greys and Bays, Creoles, Chittaprats, Corals, and Everlastings.

Their different markings have also different names, though I consider the fowls essentially the same. They are termed Moss, Pencilled, Pheasant, and Mooneys. Some people talk of Spangled fowls of this breed; but if they consider that a Spangle should have every feather tipped with white, as I have described under the head of Spangled Pole, they will find that these should be called Pheasanted. The whole of this variety is again divided into two sub-varieties, termed Gold, or Silver: the Golden being of a clear ocre or red-brick colour, and the Silver of a cream-laid white, which constitutes the ground colour.

In the variety called Moss one of these colours is grizzled, or lined with black, or slate, somewhat as if it were thinly covered with moss.

In the Pencilled variety these lines are fewer, more distinct, and assume a more decided figure.

In the Pheasant variety the feathers are clear, tipped with a shining black, very much resembling the breast of a cock pheasant, whence is derived the name.

Mooneys I am not able to describe, but presume the feathers are more bordered with black, giving them a scaly appearance.

Most of these varieties should have the neck of the ground-colour, without speck or mark, and the tail black, marked with the prevailing colour—it being in the breast and body feathers, generally, that the beautiful markings show most distinctly. I have heard of a black-necked variety, but never had any. The chicken, when first hatched, are of a creamy white, with a few black spots on the head, and in a few weeks appear covered with alternate stripes of dark and light. The cocks often do not show the markings like the hens, or not so distinctly, they frequently being almost entirely of the ground-colour, with a black mark or two on the wings, and the tail nearly black.

A dark sort of fowl is also kept by some few persons, and called by them Everlasting-layers, reported to be a good laying kind, their eggs being rather larger than those of the Dutch Every-day-layers. These are a cross between them and the Spanish fowl, but do not lay quite so well as the true breed. Some are single-combed, but most of them have a peculiar-shaped comb, appearing like two single combs united at the extremities.

I wish, however, particularly to call the attention of my readers to the differences between the Polands, Hamburghs, and Dutch Every-day-layers. The first has a very large tuft of feathers on the head, and no comb whatever; the second has a tuft, and a small double comb, and evidently owes its origin to the first and third; and the third has no tuft, but a full rose comb of coral redness.

The Rev. Edmund Saul Dixon appears, in his "Ornamental and Domestic Poultry," not to discriminate between the Poles and Hamburghs; and, consequently, is incorrect in applying the name of Hamburgh to the Dutch Every-day-layers, which has caused much confusion. Mr. Trotter, in his prize Essay on Poultry, in the Royal Agricultural Journal, has, I consider, rightly named them, as well as Mr. Richardson, in his excellent little work, "The Domestic Fowl;" but I am sorry to find the confusion is attempted in the later editions of the same work. But again, in "The Poultry Yard," one of a series of shilling books published by Charles Knight, entitled the "Country House," the three sorts are distinctly explained; but even there the term Spangled is applied to quite opposite markings.—B. P. Brent, *Bessels Green, near Seven Oaks.*

GARDENING IN JERSEY.

Wide prospects may sometimes be seen through small openings. The following slight incident will exemplify the fruitfulness of many of the Jersey gardens. Riding, this summer, outside the omnibus which goes from St. Heliers to Gorey, I got into conversation with an Englishman, who resided with his wife and two children on the Island. "That's my cottage," said he, as we saw it in the distance; and truly a sweet spot it was. "You have probably a good garden too," I remarked. "Garden," he exclaimed, "yes, but that's the drawback; I cannot manage it, it gets the master of me. I am obliged to cultivate it to prevent weeds; but the growth of vegetables is so rapid and luxuriant, that I am unable to consume them fast enough, and as for selling anything, why I asked at market to-day what they would give me for a crop of young cabbages, as fine ones as you ever saw; twopence a dozen was the offer! so I shall alter my tactics, and grow in future, root crops, as onions, parsnips, carrots, potatoes, &c.; these I can stow away for winter use." Jersey produces fine garden vegetables in quick succession, and perhaps a crop more of certain kinds may be got off a given space than in England, owing to the fostering influence of the climate; but then, in England each crop continues longer in perfection. Thus are our blessings equalised. Cider averages about 21s. per hogshead, and is sold retail at 1d. per quart. At Guernsey, as the steamer hove to on her return, to take in, and discharge, goods and passengers, a large basket of flowers was handed up the ship's side; "they will be 1s. 6d.," said the waterman. I afterwards traced them to the cook's cuddy, and found they consisted of nine large bouquets, for which the cook obtained sixpence each at Southampton. Flowers were among his weekly perquisites. He was washing kidney potatoes when I accosted him; these he said were "Newfoundlands," and procured at Jersey. They were superior to the ash-leaved kidney, less subject to disease, boiled better, and where he found one defective among them, he found five in any other sort. He thought that they were of comparatively recent introduction. S. P., *Rushmere.*

STRAWBERRY PLANTING.

In the last monthly part of The Cottage Gardener there were some very good remarks on strawbery planting in small gardens; but as the plan I have hitherto pursued with success differs from them, it may benefit some of your readers to know it.

As recommended in the number alluded to, I take off the runners as early as possible, and plant them in nursery beds, where they remain until February; they are then removed, with a ball of earth to each plant, to the fruiting beds. The reason for selecting that month is, because it allows time for getting off any crop that may be on the ground, and for properly preparing the ground for the strawberry plants. This year I have adopted another plan, by which, I think, I shall almost gain a season. When top-dressing my old beds on the 28th of February last, I observed some runners rooted in the walks, and, as I intended making a new plantation, it struck me that those runners would make good plants against August, I, therefore, planted them into a nursery bed, where they remained until last week, when they were removed to the fruiting ground in the manner above stated, and true enough they were the best plants I ever put out, and doubt not but I shall have a full crop the first season; indeed, my faith in them is such, that I have planted them out at full distances, my usual practice being to remove every other plant the second year.

A Lover of Gardening in all its Branches.

TO CORRESPONDENTS.

Plans of Flower-beds.—We shall be obliged by our subscribers sending us plans of their *Flower-beds*, and *Geometric Gardens*, as we wish to publish, in our next volume, a series of engravings of such as we can recommend, with a catalogue of the flowers we would plant in each bed. We have abundance of plans, but we are not so conceited as not to know that there are many others we should be pleased to adopt as excellent.

Geometric Flower Garden (*Suburban*).—A piece of ground, 40 feet wide, and 300 feet long, enclosed on all sides, cannot well be laid out as a flower garden, otherwise than in the geometric style. Edgings, or no edgings, to beds or borders, on grass, is altogether a matter of taste; we like them better without. When the beds are on gravel there is no choice, they must have edgings to keep the soil from mixing with the gravel. Avoid triangular shapes as much as possible; all sharp angles are great defects in flower-beds, as plants cannot be managed properly in such angles. The best plan would be to grub up all the fruit trees and bushes, trench the ground four feet deep, if the loam is so deep, and replant with young stuff of the best kinds now in use. Trees and other things 150 years old are not worth the trouble of doctoring, anyhow; and they will never repay you, or give satisfaction, if you do.

Wintering Scarlet Geraniums (*Gosforth*).—You cannot follow "Harry Moors's plan" with those now in the borders. His plan is to keep them, from year to year, in large pots or boxes, without changing the soil, and trusting to strong water, and a fresh top surface every year. We shall follow Harry's plan to the letter, this winter, with all our portable scarlet geraniums. Those in the borders, we have just cut their roots all round, six inches from the stem; and after the first sharp frost we shall take them up, and pot them, and keep them green all the winter. You cannot do better than do likewise, as you have the use of the windows; but first read the many ways set forth in former volumes.

Forcing Fritillarias (*R. F.*).—There has been a good deal said about Fritillarias in our former volumes, but you did not know how to look for it. All the Crown Imperials (may we say, many of the Imperial Crowns?) are Fritillarias—that is, chequered like a chess-board. What you mean, however, are the varieties of *Fritillaria meleagris.* No doubt but these could be forced a little, like Hyacinths, only they would not stand so much heat. They grow in any good or indifferent garden soil, and require the same treatment as the Crocus. They would not be in character in a bed with hyacinths.

Grape Hyacinths (*Ibid*).—The family name for these is *Muscari.* The white one is a variety of *botryoides*, and if this species was followed up, it would run into as many varieties as the Hyacinth itself. They make nice edgings for beds of any spring bulbs, and, like the last, require the same treatment as crocus.

Best Flowers (*Windflower*).—No one could answer your question, except for him or herself, it is such a matter of taste; but we shall treat generally on the subject in our next volume. The best time to pot *Columnea Skinnerii* is about the middle of April, if it was growing fast; and another shift at the end of June, but not later.

WINTERING VERBENAS (*St. John's*).—Mr. Beaton said, "Cut the *roots* of old Verbenas, in September, to within six inches of the stem, or stool; pot them in October from the beds, and they will then keep over the winter better than cuttings." You fear, "the roots being so short," there will be none to cut at that length from the old stem; but Mr. Beaton answers that his Verbenas seldom made roots less than two feet long. Some were four feet long. You mean the roots from the joints of the young shoots which are not wanted; all the shoots are to be cut back at potting time to the same dimensions, or rather shorter than the six-inch roots. It is not now too late to try this useful plan.

PIT OVER A WELL.—*W. H. O.*, at page 374, might well say there is nothing new under the sun. The very plan he mentions was suggested many years ago by Mr. Gorrie, of Annat Lodge, Carse of Gowrie, in Loudon's *Gardeners' Magazine* for 1830, page 402; and he there says he found it successful, but it was on a small scale, and using cotton as a covering instead of glass.

KEEPING PLANTS IN A STABLE (*M. M—, Cranbrook*).—This is 15 ft. by 17 ft., and 12 ft. high, furnished with a window, and a light above the door, and to be further supplied, if necessary, with a stove and pipe to burn cinders. Will it do to keep geraniums, heliotropes, and petunias, over the winter? We doubt it; old geraniums, deprived of their leaves, would do. We fear the moisture and the ammonia together would kill the others. Rather keep them in your pit without artificial heat, or devote a small room in the house with good light to such a purpose. Such a stove applied to your pit, if the pipe is tight at the joints, would be a capital thing for expelling damp.

TECOMA JASMINOIDES NOT FLOWERING (*A Subscriber, Dalston*).—This must either have plenty of room, or be curtailed at the roots, and have the shoots well-ripened. Messrs. Knight and Perry tell us that they have a variety that blooms in a very small state doing well in a pot.

SHOWY PLANTS FOR A SMALL HOUSE (*Ibid*).—Many of these have been alluded to, and some pretty things, only a few weeks ago; but more attention will be given to the matter directly.

BIGNONIA CHIBERE.—This was lately spoken of somewhat doubtfully by Mr. Fish, as being suited for a warm conservatory. He has since learned that it has grown and bloomed beautifully in a common conservatory at Trentham, where frequently the frost is merely excluded. It seems, therefore, to do equally well in a cold house or a warm one.

TWO EGGS IN A DAY.—Captain W. Hornby, R.N., informs us that one of his Cochin-China hens laid two eggs on the 14th instant, but then she did not lay on the following day.

GRAPES AND CAMELLIAS (*An Anxious Enquirer*).—You can now only dust the leaves of the vine with flowers of sulphur to check the mildew. When all the leaves are shed, remove every growing plant from the house, *burn* some sulphur in it, and then paint over all the stem and branches with the mixture of sulphur and clay so frequently mentioned by Mr. Errington. Your *Camellias* shedding their blossom-buds, probably arises from their roots being sluggish, either from too great dryness, or too little warmth.

FORGET-ME-NOT.—*Ellen* would be obliged by being informed where she can get some of the seed of the true blue species.

MANURE (*A Lady*).—The cow-dung, though only a few months old, will do for your flower-beds and bulbs. Rotted weeds, and *thoroughly decayed* tan, are the nearest approach you can have to leaf-mould. The tan must not be used unless reduced to a black powder. *Bone-dust* is a very good manure for roses, hollyhocks, and all flowers. Your *rose-buds dropped off* probably from want of moisture at the roots. These should have had mulch over them, and water, soap-suds, &c., applied during the dry weather in summer.

CHEPSTOW FLOWER SHOW (*J. Heath*).—The Society, unless they stated publicly otherwise, were wrong in saying the extra prizes for Dahlias were "open to all England," and then refusing to let you exhibit unless you "paid a subscription of 10s. to the Society." We quite agree with you in thinking that any gardener who was busy with the exhibitors whilst taking the Dahlias to the stands, should not have been one of the judges. Judges should be from some place far distant from the locality of the exhibition, or they will always be suspected of bias, whether deservedly or undeservedly.

PELARGONIUMS (*W. H. O.*).—You will find a full list and description of the species, and a treatise on their culture, in *The Cottage Gardeners' Dictionary*. We know of none trustworthy in a separate form. The varieties of the *Gourd* are too numerous in India, and elsewhere, for us to tell you the name of yours. We know of no test whereby to know a double from a single *Hollyhock* before the bloom opens, except that the flower-buds of the double are more globular and larger. *Glass labels*, written upon with a diamond, have been long in use; but your suggestion of painting the back black, to render the writing legible, is very good. The great objection is, that there is a difficulty in fastening them to any plant, and the incapacity of many people to write with a diamond readily.

DRIED GRASSES AND FLOWERS.—*A Subscriber* would be glad of information where she can obtain these for winter bouquets? They can be obtained in Covent Garden Market; but any one who will advertise particulars will find it to their advantage.

WINE-MAKING (*A Constant Reader*).—You may obtain Mr. Roberts's book on this subject through any bookseller. You will find there where his saccharometer may be purchased.

GOLDEN SPANGLED HAMBURGH FOWLS.—*A Fowl Fancier* says, "These have no tuft on the head; those which have, Mr. Brent is right in supposing to be a cross with the Poland. I know them well, and have kept them for many years, also imported them from Germany. They are without any tuft, are much like those which in Lancashire are called *Bolton Bays*, and in this neighbourhood (Hull) *Golden Pheasants*; rather lighter in the colour, when true, and are better laced in the feather. I consider these the handsomest of all poultry. They are also called *Every-day-layers*, do not sit, and produce abundance of eggs. There are two other kinds procurable in Germany and Holland—the *Silver* and *Golden Pencilled*. In this country these are called the *Chittaprats*. They are also good layers."

PEAS IN NOVEMBER.—*G. P.* says:—"In your 'Notes on vegetables and new varieties,' in the August part, J. K. T. says, 'I grew a pea last season, called the American Dwarf, from which I gathered a nice dish the 10th of November.' When was this pea sown, and in what county?" We can answer, that J. K. T. lives in Devonshire; he will perhaps be kind enough to state particulars.

DAHLIA ROOTS (*W.*).—There are two conditions which are almost equally fatal to these when stored for the winter—heat, with dryness; and dampness. A cold dry place is the only one in which they will keep well. Hung up in an osier basket, in a dry outhouse, where frost is excluded, is as good a situation as any. They must be very thoroughly dried before putting there, and if taken out occasionally and spread in the sun they will be benefited.

PEACH AND NECTARINE TREES (*A Cheshire Rector*).—Root-prune at once, according to the rule lately given by Mr. Errington, and we will give you further directions next week.

TRAINING PEACHES, &c. (*Rosa*).—The only advantage is, that there are no holes made in the wall by nailing and unnailing, such holes being disfiguring, and harbours for insects. Two *Cochin-China* cocks are sufficient for twelve hens.

WHICH IS THE BEST FUCHSIA? (*Lacy*).—This is one of those questions to which no unanimous answer can be obtained. One good florist tells us that he should reply, *Commodore*, as a dark fuchsia, and *Prince Arthur* as a light; another authority replied, *Voltigeur* for the dark, and *Bride* for the light; and for ourselves, we should select *Sir John Falstaff* for the dark, and *Conciliation* for the light. If you buy them all, you will have six good ones. Your shrub is probably an *Acacia*, but we might tell better if you sent us a leaf from the top, as well as from the lower part of your young plant.

NAMES OF PLANTS (*A. B.*).—Yours are, 1. *Polypodium vulgare*; 2. *Myosotis arvensis*; 3. *Daucus carota*, the wild carrot; 4. *Chenopodium urbicum*; 5. *Centaurea nigra*; and 6. Of *Blechnum boreale*, the fruiting frond.

CALENDAR FOR OCTOBER.

FLOWER GARDEN.

ALSTRŒMERIAS, Van Hout's, varieties, and others, plant six inches deep, and in frosty weather cover with leaves. ANEMONES, plant for earliest bloom. Sow a few of the hardiest ANNUALS before the end of the first week. AURICULAS and POLYANTHUSES, put under shelter. BEDDING GERANIUMS, save as many as you can store; cut them close, and plant them in cold pits; or dry, and keep in the upper rooms of the house. BULBOUS ROOTS, finish planting in dry weather; pot for latest forcing, and for plunging in flower-beds, &c. CARNATION layers, finish planting and potting; secure the pot ones from rains. CLIMBERS of all sorts, plant, prune, and train. COMPOST, prepare, and turn in dry weather. DAHLIAS, cut down after frost, and let the roots remain as long as it is safe; when taken up, dry them in open sheds, &c., before storing where frost and damp cannot reach them. DRESS the beds and borders, and put mark-sticks to bulbs and other roots, to guide you when digging. EDGINGS, plant. EVERGREENS, finish planting, b. FIBROUS-ROOTED PLANTS, finish dividing and planting, b. FORK over borders, &c. GRASS, cut very close the last time; keep clear of leaves; and roll. GRAVEL, weed and roll. HEDGES, plant, clip, and clear at bottom. HOE and rake shrubberies, and bury the leaves, &c., between the plants. IRIDS, as *Ixias*, *Gladioli*, &c., plant, and shelter from frost. LAYERING, perform generally. LEAVES, gather for compost, &c. MARVEL OF PERU, take up and store like dahlias. MULCH round trees and shrubs lately planted. PLANT perennials and biennials. PLANTING, perform generally. POTTED PLANTS, for forcing, plunge in the earth of a well-sheltered border, facing the sun. PRUNE shrubs and trees generally. RANUNCULUSES, plant for earliest bloom; seedlings of them, in boxes, &c., remove to a warm situation. ROSE-BUDS, untie the matting, if not already done, from newly budded, and cut the shoots to within six inches of the buds. SHRUBS of all kinds, plant, stake, and mulch. SUCKERS, from roses and other shrubs, separate and plant. TIGRIDIAS, save from frost as long as possible; should not be dried till January or February. TULIPS, finish planting, b.

D. BEATON.

ORCHARD.

APPLES, house in succession. BERBERRIES, gather, m. BORDERS, prepare, b; composts, collect. CURRANTS, prune, e. DAMSONS, gather. FRUIT-TREES, remove, e. FRUIT-ROOM, carefully ventilate. FIGS, pluck off late fruit, e. GOOSEBERRIES, prune, e. GRAPES, bag, or otherwise protect. MULBERRIES, gather. MEDLARS, gather. PEARS, gather in succession, all at the end. PLANTING, prepare for, and proceed with at e. PRUNING, commence as soon as the leaves are cast. RASPBERRIES, protect late-bearing. RETARDING: look well to currants and other retarded fruits; keep away mouldiness. ROOT-PRUNE, b. STRAWBERRIES, dress away runners, but not the leaves, b. TOMATOES, gather, and ripen on heat, b. VINES, attend well to, b. WOOD ripening: do all you can to secure this, b.

R. ERRINGTON.

FRUIT-FORCING.

AIR—MOISTURE, gradually decrease. BOTTOM-HEAT must decline with the light until they reach about 75° in December. CUCUMBERS, thin out carefully; stop regularly; and give liquid manure. CHERRIES, in tubs or boxes, plunge in a cold and shaded situation. FIGS, see that the wood is well-ripened; those in pots plunge and secure from frost. FIRES, be moderate with; rather inclose sun-heat. FLUES, clean and repair. GRAPES, late, fire and ventilate freely; watch for decaying berries. GLASS, wash all that is in any way dirty. MELONS, sustain a bottom-heat of near 80°; keep down red spider, and ventilate freely in the morning. NECTARINES and PEACHES: apply liquid manure to late houses after heavy crops; keep away red spider; stop all growing shoots, and secure the ripening of the wood. PINES, sustain heat, in order to ventilate most freely those to winter in pits. Apply liquid manure to swelling fruits, and sustain a bottom-heat of 80°; atmospheric from 65° to 85°. PRUNE vines, peaches, &c. for very early forcing. REST, apply systematically the principles to all things for early work. WATERING, decrease at the root in proportion to the decline of the season.

R. ERRINGTON.

GREENHOUSE.

AIR, admit freely during the day, but sparingly at night, unless the thermometer out-of-doors be about 40°. ALSTRŒMERIAS, shift, or rather pot in rich light soil, and place where they will be secure from frost. They thrive beautifully when planted out in a pit or border, where they can be covered with glass in winter. AZALEAS, remove into the house, especially those that bloomed early, as the least frost will discolour their leaves. BULBS, pot for early blooming. CINERARIAS, forward ones give manure water, and have secured under glass. Very little frost injures them. CAMELLIAS (See AZALEAS). CALCEOLARIAS, strike cuttings; pot forward plants; prick off seedlings. CHRYSANTHEMUMS for winter blooming, provide with shelter from cold rains and early frosts, and water with manure-water, alternately with clean. CLIMBERS on rafters now prune in, to give light to the plants beneath. CLERODENDRONS, GESNERAS, LANTANAS, ACHIMENES, &c., keep in the warmest end of the house preparatory to resting them for the winter, or returning to the plant stove. AZALEAS, CAMELLIAS, FUCHSIAS, &c., at the coolest. Cuttings of all kinds, especially late inserted ones, intended for out-door work next season, keep secure from dampness. Very dull cold weather will be their greatest enemy. Be careful how you apply any artificial heat—it generally does more harm than good. CYTISUS and GENISTA, scourge well with soap-suds, and then with clean water, to remove all traces of Red-spider, and then place where they can be sheltered, before being housed at the end of the month. ERYTHRINAS out-of-doors, when touched with frost, take up and pot, and placed under shelter, not cutting the stems down until moderately ripe. GERANIUMS, keep clear from fly; and slowly growing; this last condition is the best antidote against the former; avoid, however, letting them be cold and soaked too, for then you will have spot; forward ones may be repotted, and fresh struck ones potted off. GLADIOLUS, pot. HEATHS and EPACRISES, get under shelter, and give them abundance of air, when temperature about 40°. All hard-wooded plants will require similar treatment, only the hardiest may have the airiest and coolest place. EARLY FUCHSIAS may be put into sheds before their stems have been injured by frost; pot all young struck plants. *Geraniums, Calceolarias*, &c., for beds and vases, may be kept easier in boxes than in pots—say 5 inches deep, 6 inches wide, and 2½ feet in length; give them two or three inches each. SALVIA SPLENDENS, encourage with manure waterings, and syringing with soot water, to banish the Red-spider before housing it in the conservatory. Plants to be raised from the flower-beds should previously have their roots cut round, and then after potting should have a little bottom-heat, to encourage fresh roots, while the top temperature is kept cool. They will not require to be often watered for a time, but syringing the tops in sunny days will be serviceable. ALL PLANTS should be thoroughly CLEANED, and houses and glass washed and put in good order. WATER should also now be given with a careful hand, and only when necessary. A plant may not require it above once or twice a-week now, that would have wanted refreshing twice, in the dog-days, during a forenoon's sunshine. Those swelling their flower-buds, will require, however, a good supply. Bear in mind that bad watering is the great cause why pot plants so often languish and die.

R. FISH.

ORCHID HOUSE.

AIR; in fine warm weather, a small opening to allow fresh air to enter the house will be useful, both for the keeping down the temperature of the house, and changing the air. BLETIAS should be put to rest by withholding water, and placing them in a pit or cooler house. CYCNOCHES, *Cyrtopodiums*, and *Catasetums*. These plants should now be kept dry a few days in the warm house, and when perfectly so, remove them into a cooler one. FIRE may be applied to heat the hot-water every night, more or less, according to the state of the temperature out-of-doors; raise the thermometer by day to 70°, by night let it fall to 60°. INSECTS, look diligently after; every one destroyed now will prevent a host from coming into life in the spring. LYCASTES, and other similar plants, should go to rest; place them on a shelf where they may be protected from ever receiving any water. PLANTS that require to be placed in a place to *rest* may be known, first, by the full, plump, mature pseudo-bulbs, and, secondly, by the leaves turning yellow and dropping off. When in such a state, it is absolutely necessary to reduce the water and heat, to prevent them from growing again prematurely. PLANTS that are *growing* should have their due share of water, and be kept moderately warm; some may require potting, and all will be the better for a top-dressing with fresh compost. STANHOPEAS will now be at rest; give no water till the spring, This month is a suitable season for providing materials for growing Orchids, such as fibrous peat, turfy loam, sphagnum or bog moss, branches of trees, and broken crocks; all these, duly prepared, and kept dry and warm, will be ready for use whenever they are wanted during the wet season.

T. APPLEBY.

PLANT STOVE.

ÆSCHYNANTHUS, reduce water to; prune in straggling branches. AIR, give every favourable day. ACHIMENES, place in a cooler house, to cause them to give over growing and go to rest; give no water, and put them in a spot where no water or dry heat will reach them; this rule does not apply to *A. picta*, which should now be in flower, and in its greatest beauty. AMARYLLIS AULICA will now be showing flowers; remove it, as soon as the flower-buds are visible, from the tan-pit into the stove; all other species of stove *amaryllis* should now be at rest. CONOCLINIUM IANTHEMUM, or, as it is now called, *Hebeclinium ianthemum*, a winter-flowering, elegant stove plant, repot, and grow on to flower in February or March. ERANTHEMUM PULCHELLUM, and *E. strictum*, treat similarly. ERANTHEMUMS, water with liquid-manure, to induce them to open their flowers freely. GESNERAS should all be at rest, excepting *G. zebrina*, which will now be one of the chiefest ornaments of the stove. JUSTICIA, several species will now be in flower; water them freely, occasionally using liquid-manure. LUCULIA GRATISSIMA, though not essentially a stove plant, will flower much finer early in the season if brought into the stove this month. MEDINILLAS, young plants repot; older plants, keep partly dry, and cool. PASSION FLOWERS, trim in freely. POINSETTIAS, water freely, to produce fine head of bloom in winter. ROGIERA AMŒNA, and CORDIFLORA, repot; place in heat, to bloom about Christmas; a new genus of dwarf, free, winter-flowering, stove shrubs. REMOVE stove plants kept in frames through the summer into the stove; water freely, to compensate for the loss of the moist atmosphere of the pit. WATER, apply very moderately to the general stock. Remove all decaying leaves, and top-dress generally.

T. APPLEBY.

FLORISTS' FLOWERS.

ANEMONES, plant early in the month. AURICULAS and POLYANTHUSES, place in their winter quarters, m.; give no more water than just sufficient to keep them from flagging. CALCEOLARIAS, place close to the glass; prick off seedlings. CHRYSANTHEMUMS, give abundance of water to and plenty of air; kill insects on by frequent smoking. CARNATIONS and PICOTEES, finish potting-off into 48-pots, and place under shelter. CINERARIAS, keep in frames well protected from frost till next month, excepting early flowerers, which should, as soon as bloom is perceived, be removed into the greenhouse; seedlings pot off. DAHLIAS, protect from frost; if already caught by it, cut down, and lift the roots, to prevent excessive bleeding; protect plants cut down from frost, by covering with a layer of coal-ashes. FUCHSIAS, gradually dry off, and place under the stages, or in sheds, where the frost will not reach them. GLADIOLI, plant b. in light rich soil. HYACINTHS, choice, plant, b. in a deep rich sandy soil, in a sheltered nook. Common sorts plant anywhere in beds and borders. Pot HYACINTHS in mild compost, and deep pots, press the soil firm to prevent the roots descending too quickly to the bottom of the pots. IRISES, English and Spanish, plant b. in rich soil. PANSIES, pot off cuttings, very choice kinds place under glass in cold-frames; plant out common kinds, b.; prick out seedlings; old, straggling plants destroy, or prune in severely. PINKS, plant out finally where they are to bloom. RANUNCULUSES, examine and remove all decaying, or mouldy, tubers; prepare beds for; Turban varieties, plant b. TULIP-BEDS, level, and make ready to receive the bulbs early next month. WEEDS, pluck up in every department of the florists' garden.

T. APPLEBY.

KITCHEN-GARDEN.

This is the season to look out for plenty of plants of all kinds that are likely to be required for the ensuing spring; and if you run short of any particular kinds, be active in looking round among your neighbours and friends to see what you can exchange with them, as one may have an abundance of Lettuces, another an abundance of Cauliflowers, and so on. This is the way we should help one another. The next thing is to arrange good and proper situations for winter protection. Frames that are done with from the Cucumber or Melon crops may be removed from the old hotbeds, and set down on the ground, level or upon sloping banks; and if the frame be a deep one, the bottom may be filled with any kind of material to within nine inches of the top of the frame, then upon that six inches of good earth; this brings the crop up within two or three inches of the glass. The same may be done with merely four boards nailed together, and so placed upon a sloping bank, filling up in the same way, so as to keep the pricked-out crops up close to the glass. These are contrivances for pricking-out Cauliflowers, or Lettuces, Cabbage-plants of any kind, and make excellent make-shift shelters.

ANGELICA, keep clear of weeds. ARTICHOKES, attend to winter dressing. ASPARAGUS-BEDS, attend to winter dressing; seeds collect, and plant for forcing. BALM, plant. BEET, take up for storing. BORECOLES, towards the end of the month, may be lifted into quarters of less value, should the ground be likely to be wanted for other purposes for early spring crops. BROCOLIS, keep clear of weeds, and attend to those heading in, to protect from frost, &c. BURNET, plant. CABBAGES, plant out, prick out, and earth-stir among. CARDOONS, earth up. CARROTS, take up main crops for winter store, and attend to young growing crops, as thinning, keeping clear of weeds and fallen leaves, &c. CAULIFLOWERS, plant out under hand-glasses about the middle of the month; also in frames for winter protection. CELERY, plant and earth up. CHIVES, plant. COLEWORTS, plant. CRESS (Water), plant. CUCUMBERS, plant out; keep up heat of beds, by linings, &c.; water sparingly. DILL, plant. DUNG, prepare for hotbeds. EARTHING-UP and earth-stirring, attend to. ENDIVE, plant, and attend to blanching; full-grown may be taken up and planted at the foot of walls, and other warm corners, towards the end of the month, for winter protection. FENNEL, plant. HERBARY, dress. HORSE-RADISH, take up and plant. HYSSOP, plant. JERUSALEM ARTICHOKES, take up as wanted. LEAVES fallen, remove frequently. LEEKS, earth-stir among. LETTUCES, plant and prick out under walls, or in frames, &c. MELONS (late), keep up heat, by linings or otherwise; no water must be given. MUSHROOM-BEDS make, and attend to those in bearing, &c. NASTURTIUMS, gather for seed, if not done before. ONIONS, attend to those in store, and earth-stir or thin out the autumn-sown, or plant out if required, about the beginning of the month. PARSLEY, attend to potting, for use in winter. PARSNIPS, take up towards the end of the month for winter storing; leave in the ground for seed. PEAS are sown by some about the end of the month. PENNYROYAL, plant. POTATOES, attend to; look over often to see that no decayed ones remain among the bulk. RADISHES may be sown in warm border. RHUBARB, plant in pots for early forcing, end of the month. SALSAFY, take up for winter storing. SAVOYS, plant out. SCORZONERA, take up for winter storing. SEEDS, gather of any kinds as they ripen. SMALL SALADING sow as wanted. SPINACH, keep clear of weeds; thin out, and attend to in dry weather. TANSY, TARRAGON, and THYME, plant, if required. TOMATOES, gather; if not quite ripe, place them in some warm, dry situation, where they will soon ripen off. TURNIPS, clear of weeds, and thin out young crops. VACANT GROUNDS rough up, or ridge, or trench. Those who prick out plants in frames, should be regular and mindful to take off the glass lights entirely in all favourable weather, and to tilt back and front in open, wet weather.

T. WEAVER.

LONDON: Printed by HARRY WOOLDRIDGE, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published by WILLIAM SOMERVILLE ORR, at the Office, No. 2, Amen Corner, in the Parish of Christ Church, City of London.—September 30th, 1852.

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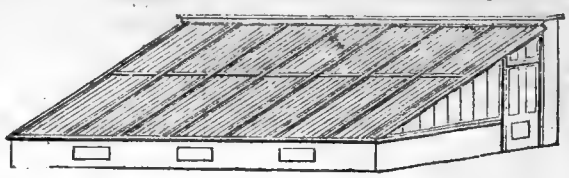

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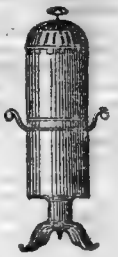

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